



Electric Motors Catalog

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We make
things **MOVE**®



We Make Things Move®

A forward-thinking innovator, Bimba provides industry-leading pneumatic, hydraulic and electric motion solutions that are easy-to-use, reliable and ready for your engineering challenges.

Doing whatever it takes to help you get the job done is what the Bimba companies do best. With an extensive line of industry-leading air cylinders, rotary actuators, linear thrusters, rodless cylinders, NFPA, hydraulics, flow controls, position-sensing cylinders, valves, switches and air preparation equipment, the people of Bimba are ready to tackle your toughest applications.

Bimba is part of IMI Precision Engineering, a world leader in motion and fluid control technologies. Wherever precision, speed and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of customers' equipment.

Our range of high-performance products, such as actuators, valves, valve islands, pressure monitoring controls and air preparation products together with trusted products brands including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal underpin our position as a leading global supplier.

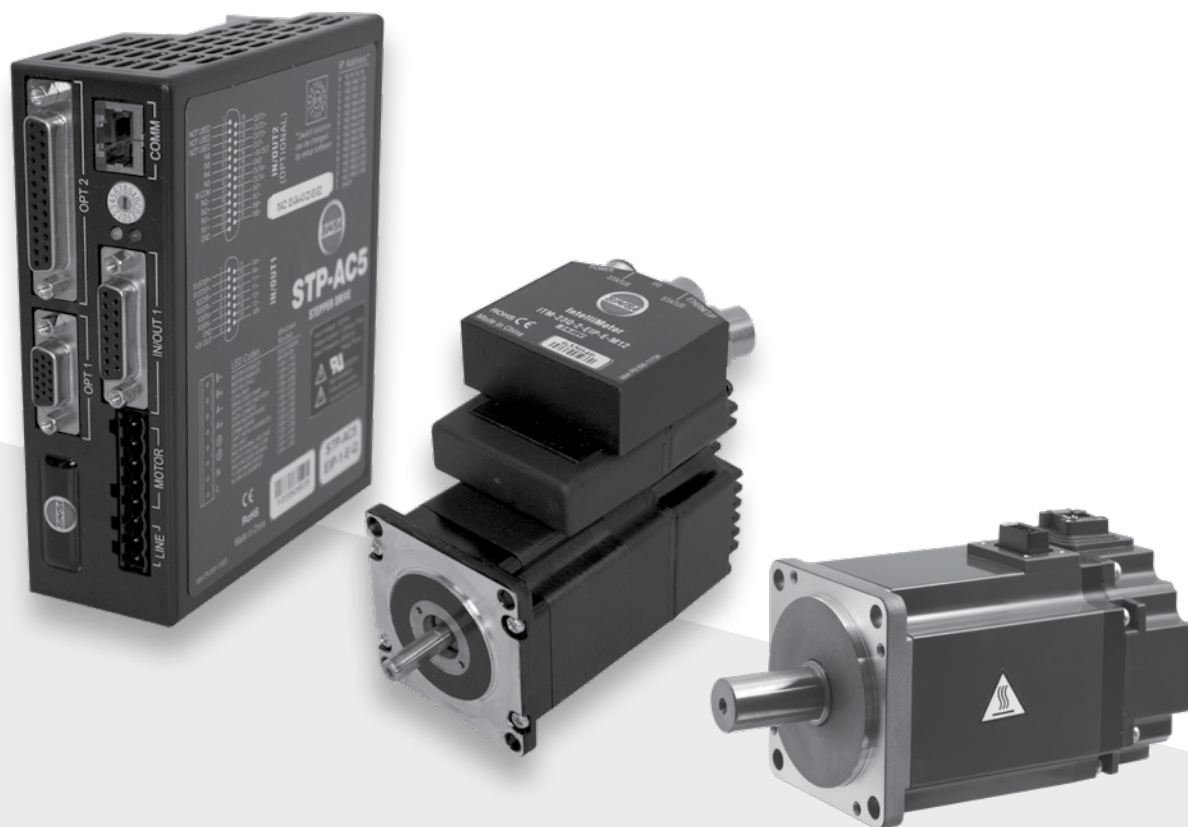
Part of IMI plc, we have a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland.

Contents

3	Motors and Controls
41	Mitsubishi® Servo Motors and Amplifiers
79	Mitsubishi® iQ-F Programmable Controllers
95	Mitsubishi® Human Interface Machines

Motors and Controls

Bimba's motors and controls offer customers a one-stop shopping experience with a large array of both stepper motors and servo motors to choose from. Considering the wide array of options, along with the proven performance and extreme value offered by Bimba motors and controls, it becomes an easy choice.



Contents

5	Product Features
	5 – Features and Benefits

6	How it Works
	6 – Materials of Construction
	6 – Definitions

7	How it's Used
	7 – Application Ideas
	7 – Target Applications
	7 – Advantages

8	How to Specify
	8 – Specifications and Sizing
	9 – Model DRV Specifications
	10 – STP-10 Drive Specifications
	12 – DC Motor Dimensions
	15 – STP-AC5 Drive Specifications
	18 – AC Motor Dimensions
	20 – IntelliMotor® ITM Specifications
	23 – IntelliMotor® ITM-23Q-*-EIP-*-M12 Connector Diagram
	24 – IntelliMotor® ITM Dimensions
	27 – Dimensions
	29 – Wiring Diagrams and Specifications
	31 – Connections and Specifications
	32 – Motor Compatibility Chart

34	How to Accessorize
	34 – Stepper Cables
	34 – Power Supply

35	How to Order
	35 – IntelliMotor® Integrated DC Stepper Motor/Drive
	35 – AC Stepper Motors
	36 – DC Stepper Motors
	37 – Stepper Drives

38	How to Repair
-----------	---------------

39	How to Customize
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Bimba motors are available in both stepper and servo motor types, as well as AC and DC versions. With motors available in both NEMA and metric frames, and with many different torque ratings available, Bimba is sure to have a motor solution to meet nearly any application need.

Features and Benefits

Stepper Motors

- > 2-phase hybrid stepper motor
- > Integrated Types - IntelliMotor®
- > High Torque Design
- > Series or Parallel wiring
- > Class B Insulation system
- > Standard NEMA 17, NEMA 23 and NEMA 34 dimensions
- > RoHS Compliant
- > Optimized for high bus voltage and microstepping

Servo Motors

- > High-Torque
- > NEMA and Metric
- > IP65 Types available
- > AC and DC Types
- > 10,000 count incremental encoder
- > Multiple speeds available

Stepper Drives

- > Outstanding Current Control
- > High torque types
- > Optimal smoothness
- > IQ® Programming
- > Analog Inputs
- > AC and DC Types

How it Works

A stepper motor is a motor whose normal shaft motion consists of discrete angular movements of essentially uniform magnitude when driven from a sequentially switched DC power supply. A stepper motor is a digital input-output device. It is well-suited to applications where control signals appear as digital pulses rather than analog voltages. One digital pulse to a stepper motor causes the motor to increment one precise angle of rotation. As the digital pulses increase in frequency, the step movement changes into continuous rotation. A typical stepper motor, including Bimba Stepper motors, "steps" in 1.8° increments for each received control pulse when full-stepping.

Servo motors share many of the internal construction characteristics of the stepper motor, using feedback in its operation. This means a servo motor is characterized by the presence and use of a feedback device. The servo motor discussed within this document is a brushless DC motor that incorporates an encoder in its function; it uses a sophisticated servo drive that constantly receives and compares position, torque, and speed information against the targeted values and uses advanced algorithms to position the motor shaft in response to the feedback error. The servo drive provides precise voltage and current to the motor according to the amount of error present.

Mounting options:

- > Four tapped holes for mounting standard
- > Block front option
- > Foot mount option
- > Trunnion mount option
- > Front pivot or clevis mount rod end kits
- > Rear pivot or clevis available with reverse parallel motor mount option
- > Extra rod extension
- > Female thread rod end optional (male standard)

Motor options:

- > Offset reverse parallel motor mounts (to conserve space)
- > No motor
- > AC or DC motor and encoder
- > AC or DC motor and drive
- > AC or DC motor, encoder, and drive
- > IntelliMotor®

Performance options:

- > Brake option (with motor) – longer lead times may apply. Compatible brakes are specified.
- > Self-locking threads (selected models)
- > Switches – band or track mounting

Specials:

- > Low backlash designs
- > Washdown motors

Materials of Construction

Piston:	6061-T6511 Aluminum
Square Rod:	304 Stainless Steel
Motor Mount:	2024-T350 Aluminum
Angular Bearing:	52100 Steel
Rod End:	303 Stainless Steel
Drive Nut:	Acetal
Coupler:	17-4 PH Stainless Steel
Fasteners:	Alloy Steel and Stainless Steel
Washdown Cap:	6061-T6511 Aluminum
O-Rings:	Buna-Nitrile
Wear Ring:	Glass-filled Teflon
Rod Bearing:	SAE 660 Bronze
Drive Screw:	303 Stainless Steel
Fasteners:	18-8 Stainless Steel
Retaining Rings:	Stainless Steel, Phosphate Covered Spring Steel
Pulleys:	Anodized Aluminum
Belt:	Nylon Covered, Fiberglass Reinforced Neoprene
Mounting Brackets:	304 Stainless Steel
Trunnion Pins:	303 Stainless Steel
R, Q, S Cap:	CF8 Cast Stainless Steel
Switch Track:	6063-T6 Aluminum
MF Plates:	2024 or 6061-T6 Aluminum

Definitions

Thrust: Output force of the actuator

Load: Total of all forces opposing the actuator

Repeatability: Window within which the actuator can reposition itself

Backlash: Amount of travel for the actuator with the screw held fixed (measured at the rod end)

Accuracy: Amount of error possible in linear position on screw thread

Lead: The linear distance moved for one turn of the screw

Static Load: Force required to move the mass at a constant speed

Dynamic Load: Force required to accelerate the mass

Friction Load: Force opposing motion of the mass due to surface contact

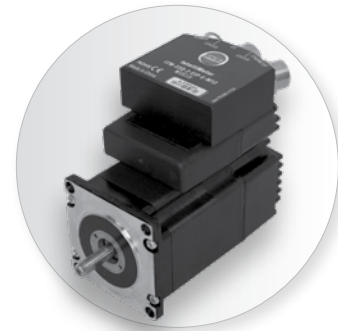
External Load: All forces not accounted for above

Weight: The force of the mass due to Earth's gravity

Stroke: The distance the mass is moved

Application Ideas

- > Electric Actuators
- > Conveyors
- > Indexers
- > Vending Machines
- > Gaming
- > Air control valves
- > Winding machines
- > Small Robotics
- > 3D Printing



Target Applications

Bimba stepper and servo motors provide the rotary motion required by our linear electric actuators to translate rotary motion to linear motion. Whether the application calls for high torque capability, high speed or acceleration, extreme precision, or repeatability, Bimba is sure to have a motor to meet the need. For those real-world applications where the environment can be less than pleasant, Bimba offers motors that are IP65 rated for use in areas where high humidity, water splash, or spray and condensation may be encountered.

All of these characteristics combine to offer a motor that provides outstanding performance with long life for many years of reliable, consistent, and precise rotary control.

Advantages

Feature	Advantage	Benefit
NEMA and metric motor sizes	Fits a multitude of electric actuators	Motor dimensions do not dictate selection
Stepper or servo motors	Match best technology to the application	Meet customer needs with the best motor technology
IP65 rated	Use in washdown rated applications	Maximize the number of applications that can be solved
Stepper motors with encoders	Enhance positional reliability	Gain potential advantage using a lower cost and less complex stepper motor
Integrated stepper motors	Ease of use	Minimize wiring and related time and chance for error; space savings

How to Specify

Specifications and Sizing

Drive Option (Y and Z)

Bimba DRV drives are the simplest OEM control solution. Drives are shipped matched to and configured for the actuator purchased. No software or programming is required. Just provide DC power, attach the motor leads, and connect step and direction (or step clockwise and counterclockwise) inputs and it is ready to run. They are ideal for use with PLC stepper cards.

- > Step and direction inputs
- > Step clockwise and step counterclockwise inputs (jumper selectable)
- > Separate output that signals a fault condition
- > Input to disable power to the motor windings
- > Accepts step inputs from 200-20,000 steps per revolution of the motor
- > Micro step emulation on two settings
- > Adjustable running current, 70-100%
- > Adjustable idle current, 50-90% of running current
- > Selectable load inertia settings
- > Self-test feature to verify all connections are correct and actuator is operational
- > Optically isolated I/O
- > Digital filters prevent position error from electrical noise on command signals
- > Electronic damping and anti-resonance



Drive	DCV Input	Bimba Option	Parallel Current Draw	Max. Parallel Current Draw	24V Power Supply Amps	48V Power Supply AmpS	Maximum Amps per Phase	Recommended Power Supply
DRV-4	24-48	Y1,Y2,Z1,Z2	1.7	3.4	4	2	4.5	150 (W)
DRV-8	24-75	Y3,Z3	5.6	11.2	12	6	7.8	320 (W)

Microstepping provides the smoothest rotation. However, a faster step pulse rate (frequency) is required for a given RPM as shown in the table below. The 200 μ and 400 μ settings use microstep emulation to provide smooth rotation at low speeds. Microstep emulation imparts a slight delay to the motion. If this is not acceptable, use the non-filtered 200 μ and 400 μ settings.

Pulses per Revolution: Relationship to Speed and Pulse Frequency			
Pulses per Revolution	Degrees per Step	Pulse Frequency Required for 300 RPM	Pulse Frequency for 3000 RPM
200	1.8	1,000 Hz	10,000 Hz
400	0.9	2,000 Hz	20,000 Hz
2000	0.18	10,000 Hz	100,000 Hz
5000	0.072	25,000 Hz	250,000 Hz
12800	0.028	64,000 Hz	640,000 Hz
20000	0.018	100,000 Hz	1,000,000 Hz

Model DRV Specifications

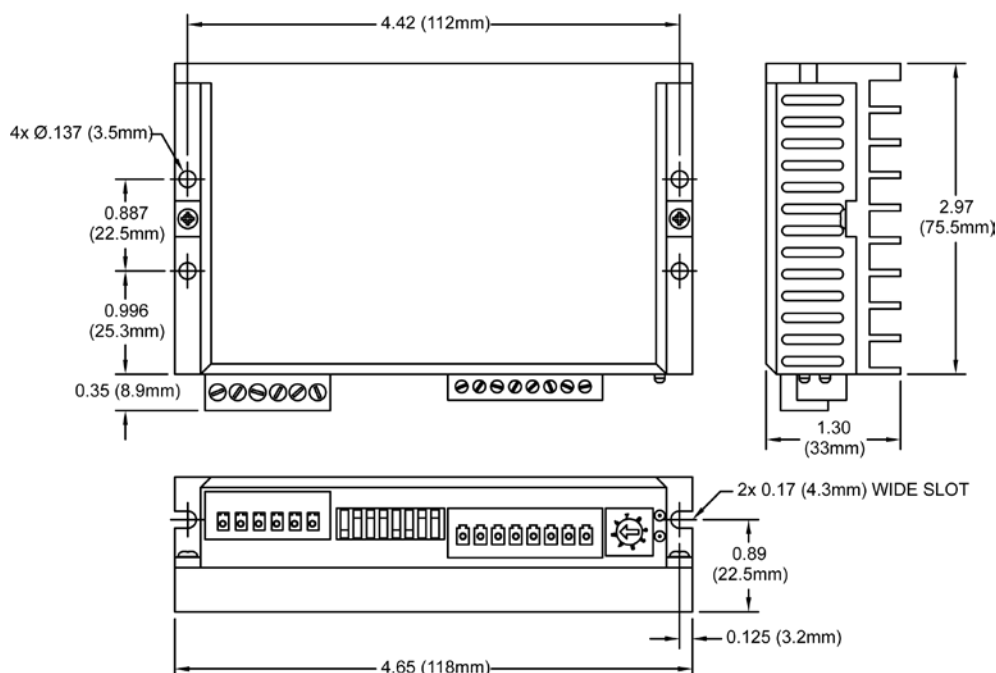
Amplifier	Digital MOSFET. 20 kHz PWM. Suitable for driving two phase and four phase stepper motors with four, six or eight leads.
	Supply voltage:
	DRV-4 24-48 VDC Under voltage alarm: 20 VDC Over voltage shutdown: 60 VDC DRV-8 24-48 VDC CE (EMC): EN 61800-3:2004 CE (LVD): EN 61800-5-1:2003 Under voltage alarm: 20 VDC Over voltage shutdown: 85 VDC
	Motor current:
	0.5 to 7.8 amps/phase peak of sine (DRV8) 0.25 to 4.5 amps/phase peak of sine (DRV4)
Digital Inputs	Optically isolated, 5 - 24V logic. Sourcing, sinking or differential signals can be used. Minimum "on" voltage: 4 VDC. Maximum voltage: 30 VDC. Input current: 5 mA typ at 4V, 15 mA typ at 30V.
Fault Output	Photodarlington, 80 mA, 30 VDC max. Voltage drop: 1.2V max at 80 mA.
Physical	1.3 x 3.0 x 4.65 inches (33 x 75.5 x 118 mm) overall. 10.8 oz (305 g) including mating connectors. Ambient temperature range: 0° C to 50° C (32° F to 122° F).

Mating Connectors

Motor/power supply: PCD P/N ELV06100 (Phoenix Contact 1757051), included with drive.

Signals: PCD P/N ELVH08100 (Phoenix Contact 1803633), included with drive.

NOTE: DRV drive does not accept encoder feedback.



How to Specify

STP-10 Drive Specifications



Amplifier	Digital MOSFET, 20 kHz PWM. STP-10: 24 - 48 VDC, motor current: 0.5 to 10 amps/phase peak of sine
Recommended Power Supply	Bimba PWR-320A48 (48 VDC, 6.7A) Bimba PWR-150A24 (24 VDC, 6.3A)
Digital Inputs	Step & Direction: differential, optically isolated, 5V logic. 330 ohms internal resistance. 0.5 μ sec minimum pulse width. 2 μ sec minimum set up time for direction signal. All other digital inputs: optically isolated, 12 - 24V logic. 2200 ohms. Maximum current: 10 mA.
Analog Inputs	\pm 10VDC, 12 bit ADC, 100k ohms internal impedance.
Outputs	Photodarlington, 100 mA, 30 VDC max. Voltage drop: 1.2V max at 100 mA.
Physical	1.775 x 3 x 5 inches overall. 10 oz (280 g) Ambient temperature range: 0°C to 40°C.
Mating Connectors	Motor/power supply: PCD P/N ELV06100, included with drive. IN/OUT1: DB-25 male. Bimba P/N 5-747912-2. Shell Kit Bimba P/N 5-748678-3. Included. Optional encoder feedback: HD-15 male. Norcomp P/N 180-015-102-001. Shell Kit Bimba P/N 5-748678-1. Not included.

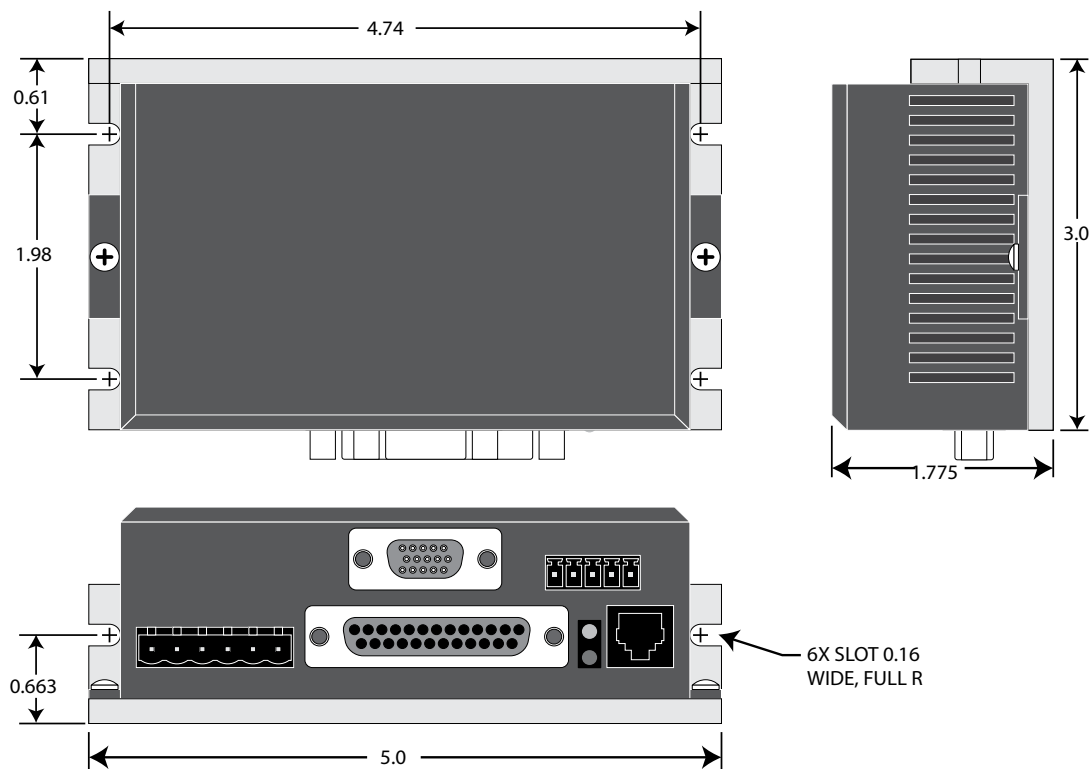
Mounting the Drive

You can mount your drive on the wide or the narrow side of the chassis using #6 screws. If possible, the drive should be securely fastened to a smooth, flat metal surface that will help conduct heat away from the chassis. If this is not possible, then forced airflow from a fan may be required to prevent the drive from overheating.

- › Never use your drive in a space where there is no air flow or where other devices cause the surrounding air to be more than 40° C.
- › Never put the drive where it can get wet or where metal or other electrically conductive particles can get on the circuitry.
- › Always provide air flow around the drive. When mounting multiple STP drives near each other, maintain at least one half inch of space between drives.

STP-10 Drive Specifications

Mechanical Outline

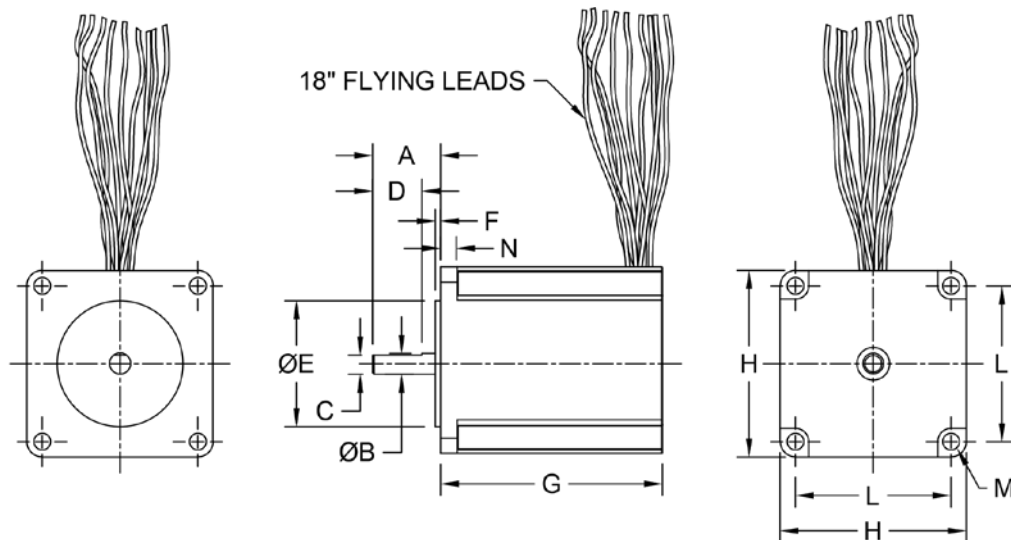


How to Specify

DC Motor Dimensions

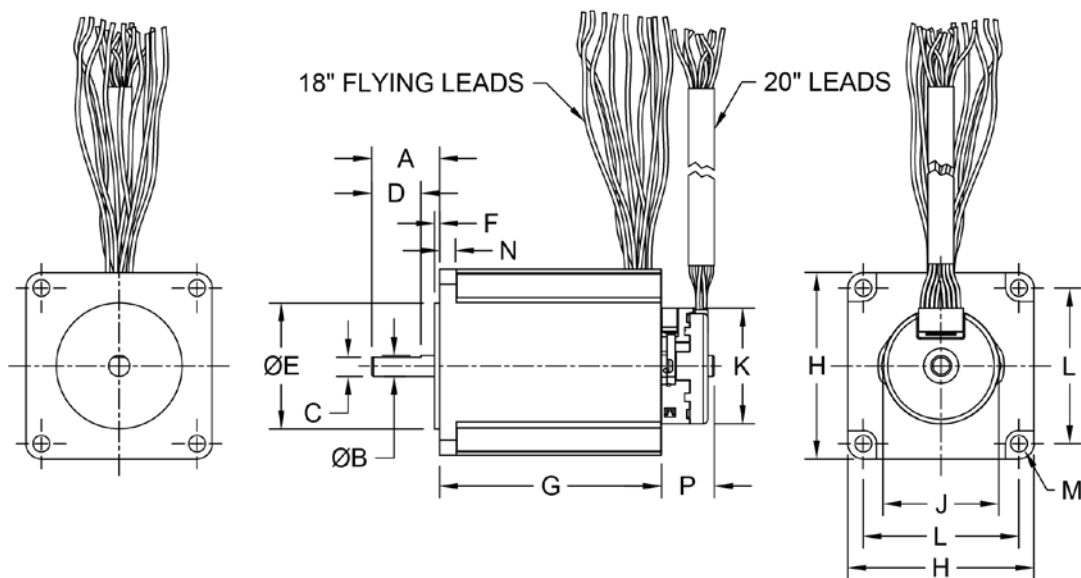
Motors (P2, P3, Y2, Y3)

Add motor dimensions to no motor actuator dimensions.



Motors (E2, E3, Z2, Z3)

Add motor dimensions to no motor actuator dimensions.

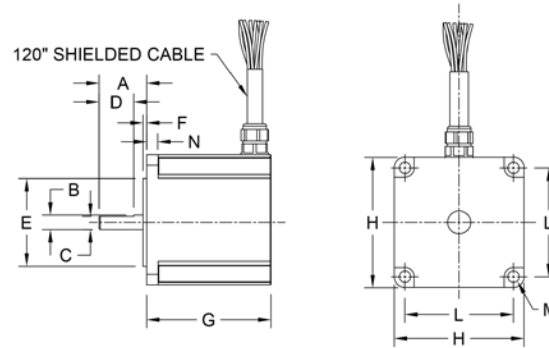


Model	Motor	Frame	A	B	C	D	E	F	G	H	J	K	L	M	N	P
75	P2/E2	23	0.79	.249/.250	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.38	1.38	1.86	Ø0.20	0.19	0.63
150	P2/E2	23	0.79	.249/.250	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.38	1.38	1.86	Ø0.20	0.19	0.63
350	P3/E3	34	1.46	.499/.500	0.45	0.98	2.874/2.876	0.08	4.94	3.34	1.38	1.38	2.74	Ø0.26	0.39	1.12

DC Motor Dimensions

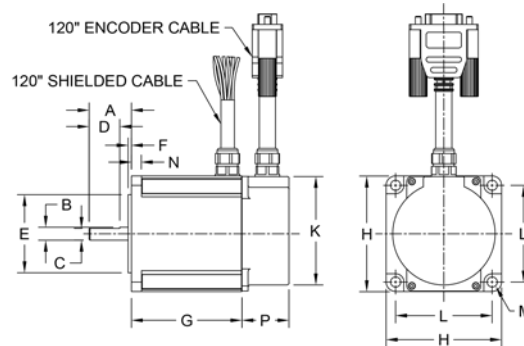
Motors (P6, P7, P8, P9, E6, E7, E8, E9)

OLE-75, -150; NO Encoder



Code	DC Motor	A	B	C	D	E	F	G	H	L	M	N
P6	MTR-DC23T-598-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.86	0.20	0.19
P7	MTR-DC23W-598-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	1.86	0.20	0.19
P8	MTR-DC23T-601-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	1.86	0.20	0.19
P9	MTR-DC23W-601-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	1.86	0.20	0.19

OLE-75, -150; Encoder Version



Code	DC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
E6	MTR-DC23T-598D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	2.20	1.86	0.20	0.19	0.91
E7	MTR-DC23W-598D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	2.20	1.86	0.20	0.19	0.91
E8	MTR-DC23T-601D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.13	2.22	2.20	1.86	0.20	0.19	0.91
E9	MTR-DC23W-601D-S	0.79	0.25	0.23	0.59	1.498/1.502	0.06	2.19	2.22	2.20	1.86	0.20	0.19	0.91

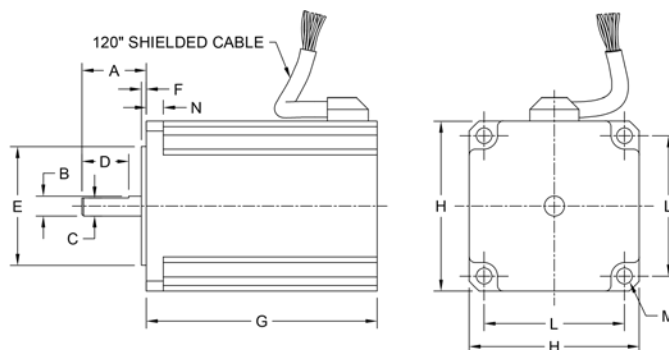
How to Specify

DC Motor Dimensions

Motors (P10, P11, E10, E11)

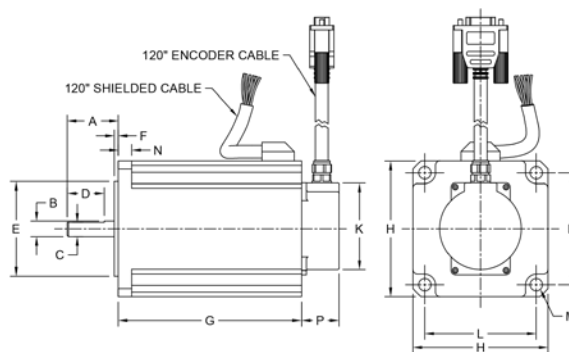
Add motor dimensions to no motor actuator dimensions.

OLE-350; No Encoder



Code	DC Motor	A	B	C	D	E	F
P10	MTR-DC34T-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08
P11	MTR-DC34W-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08

OLE-350; Encoder Version



Code	DC Motor	A	B	C	D	E	F
E10	MTR-DC34T-506-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08
E11	MTR-DC34W-506D-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08

STP-AC5 Drive Specifications



Amplifier Type	Digital MOSFET, dual H-bridge, 4 quadrant
Current Control	4 state PWM at 16 KHz
Output Current	STP-AC5-120: 0.5-5.0 amps/phase (peak of sine) in 0.01 amp increments STP-AC5-220: 0.5-2.55 amps/phase (peak of sine) in 0.01 amp increments
Power Supply	STP-AC5-120: 94-135 VAC, 50/60 Hz STP-AC5-220: 94-245 VAC, 50/60 Hz
Protection	Over-voltage, under-voltage, over-temp, motor/wiring shorts (phase-to-phase, phase-to-ground), internal amplifier shorts
Motor Inductance	STP-AC5-120: 5-20 mH STP-AC5-220: 20-60 mH
Motor Regeneration	Built-in regeneration circuit, 10 watts max
Idle Current Reduction	Reduction range of 0-90% of running current after delay selectable in milliseconds
Microstep Resolution	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps. Reduces jerk and extraneous system resonances. (Step & direction mode only).
Anti-Resonance (Electronic Damping)	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time.
Torque Ripple Smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range of 0.25 to 1.5 rps.
Communication Interface	Ethernet 100BASE-T, supports TCP and UDP
Encoder Interface	For connecting to motor-mounted encoder. Used to provide stall detection and stall prevention with static position maintenance. Differential line receivers, up to 2 MHz.
Inputs/Outputs: E models	X1, X2 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), minimum pulse width = 250 nsec, maximum pulse frequency = 2 MHz, 2 usec minimum set up time for direction signal, maximum current = 10 mA. X3, X4 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), 50 usec minimum pulse width, maximum current = 10 mA. Y1, Y2 outputs: Optical darlington, sinking or sourcing, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA. Analog input: Single-ended. Range is software selectable 0-5, +/-5, 0-10, or +/-10 VDC. Software configurable offset, deadband, and filtering. Resolution is 12 bits (+/- 10 volt range), 11 bits (+/-5 or 0-10 volt range), or 10 bits (0-5 volt range). 100 kohms internal impedance.

How to Specify

STP-AC5 Drive Specifications

Inputs/Outputs: EIP model only	EIP model has the same I/O as above plus the following: IN1, IN2, IN7, IN8 inputs: Optically isolated, differential, 5-24 VDC logic (2.5V switching threshold), 50 usec minimum pulse width, maximum current = 10 mA. IN3-IN6 inputs: Optically isolated, single-ended, shared common emitter, sinking or sourcing, 12-24 VDC logic, 2200 ohms, maximum current = 10 mA. OUT1-OUT3 outputs: Optical darlington, single-ended, shared common, sinking, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA. OUT4 output: Optical darlington, sinking or sourcing, 30 VDC max, 100 mA max, voltage drop = 1.2V max at 100 mA.
Non-Volatile Storage	Drive configuration and IntelliQ program are stored in FLASH memory onboard the DSP.
Agency Approvals	"RoHS CE EN61800-3:2004, EN61800-5-1:2003 UL 508c"
Humidity	90% max, non-condensing
Ambient Temperature	0 to 40°C (32 to 104 °F) with adequate ventilation
Dimensions	2.0 x 4.5 x 5.5 inches overall
Weight	22.4 oz (630 g)
Mating Connectors	Motor/power supply: PCD P/N ELV06100, included with drive. IN/OUT1: DB-15 male. P/N 5-747908-2. Shell Kit P/N 5-748678-2. Included. IN/OUT2: DB-25 male. P/N 5-747912-2. Shell Kit P/N 5-748678-3. Included. Optional encoder feedback: HD-15 male. Norcomp P/N 180-015-102-001. Shell Kit P/N 5-748678-1. Not included.
Mating Accessories	Screw terminal connectors with housings that mate directly to the D-Sub connectors on the drive: DB-25, Phoenix Contact P/N 2761622 DB-15, Phoenix Contact P/N 2761606 HD-15 (encoder), Phoenix Contact P/N 5604602 These connectors are not available from Bimba. You must purchase them from a Phoenix distributor.
Mating Cable for IN/OUT2 Connector with "Flying Leads"	Black Box P/N: BC00702 This cable is not available from Bimba. You must purchase it from Black Box. Useful for custom wired applications. This shielded cable has a DB-25 connector on each end. You can cut off the female end to create a 6 foot "DB-25 to flying lead cable". It'll be easier to wire if you get the cable color chart from Black Box's web site.

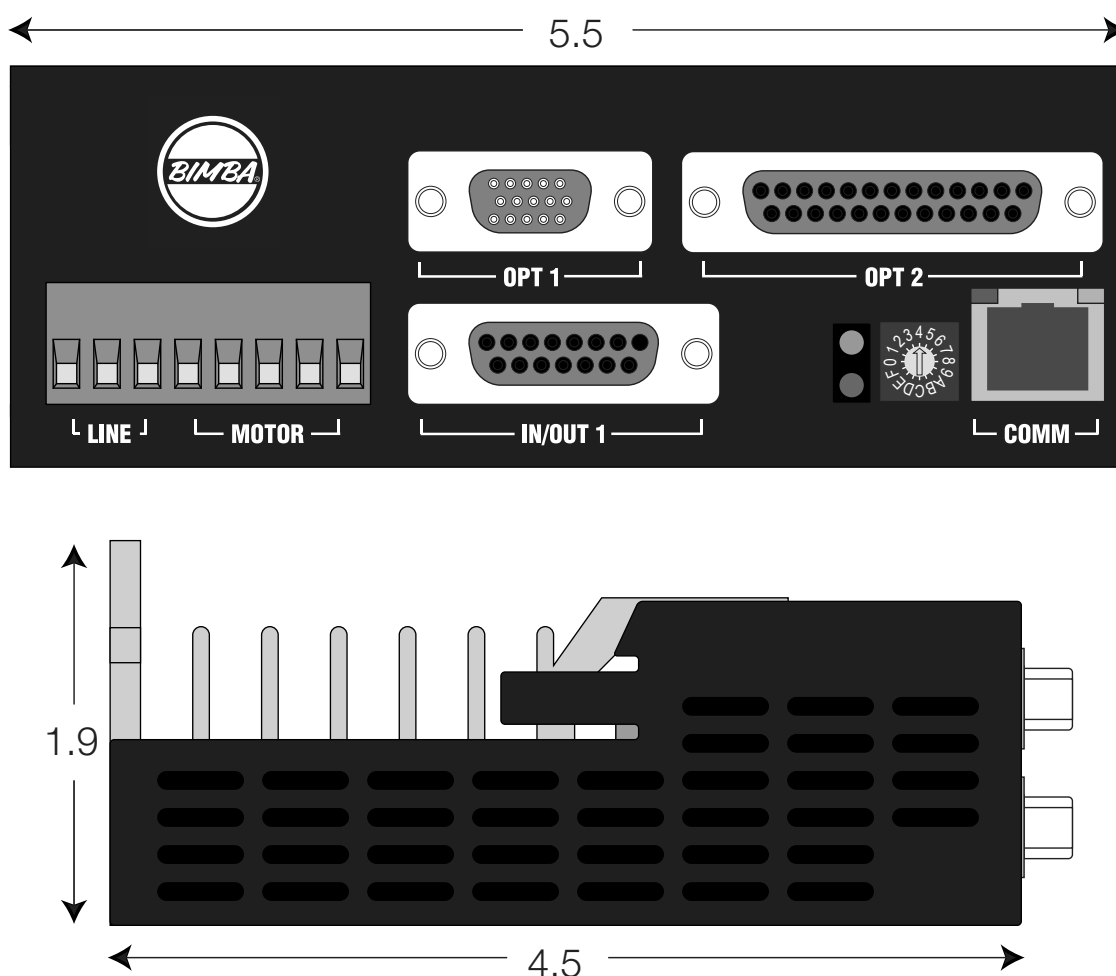
STP-AC5 Drive Specifications

Mounting the Drive

Use #6 screws to mount your drive. If possible, the drive should be securely fastened to a smooth, flat metal surface that will help conduct heat away from the chassis. If this is not possible, then forced airflow from a fan may be required to prevent the drive from overheating.

- › Never use your drive in a space where there is no air flow or where other devices cause the surrounding air to be more than 40°C.
- › Never put the drive where it can get wet or where metal or other electrically conductive particles can get on the circuitry.
- › Always provide air flow around the drive. When mounting multiple STP-AC5 drives near each other, maintain at least one half inch of space between drives.

Mechanical Outline

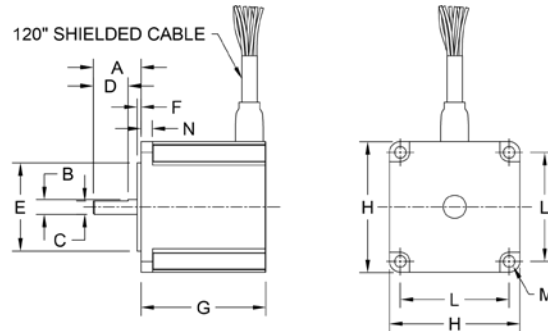


How to Specify

AC Motor Dimensions

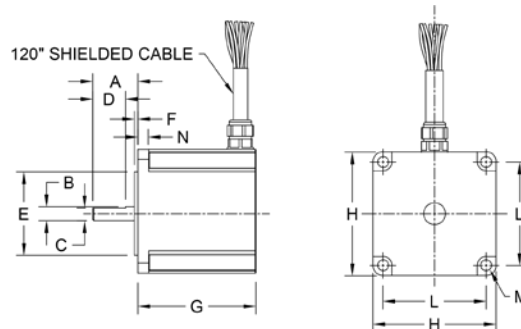
Motors (A1, A3, A5, A7, A9, A11)

OLE-75, -150; No Encoder



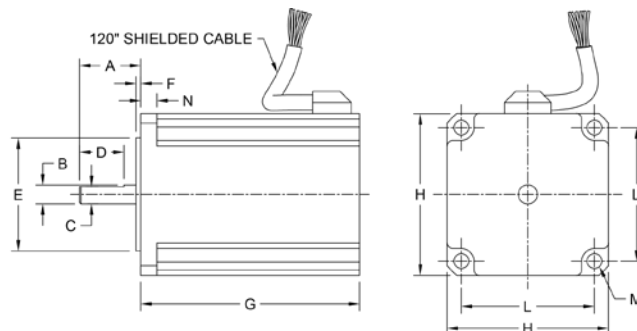
Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A1	MTR-AC23T-753-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	1.86	0.20	0.19
A5	MTR-AC23T-754-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.86	0.20	0.19

OLE-75, -150, -350 Washdown Motor; No Encoder



Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A3	MTR-AC23W-753-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	1.86	0.20	0.19
A7	MTR-AC23W-754-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	1.86	0.20	0.19
A11	MTR-AC34W-696-S	1.46	0.50	0.45	1.00	2.873/2.877	0.08	4.53	3.38	2.74	0.26	0.39

OLE-350; No Encoder

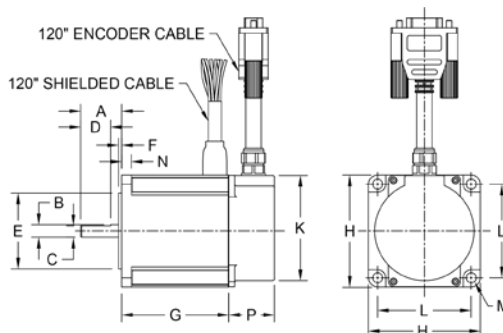


Code	AC Motor	A	B	C	D	E	F	G	H	L	M	N
A9	MTR-AC34T-696-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.74	0.26	0.39

AC Motor Dimensions

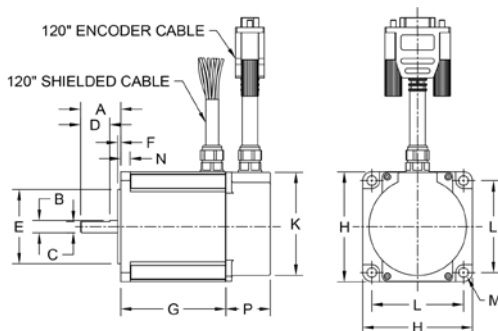
Motors (A2, A4, A6, A8, A10, A12)

OLE-75, -150; Encoder Version



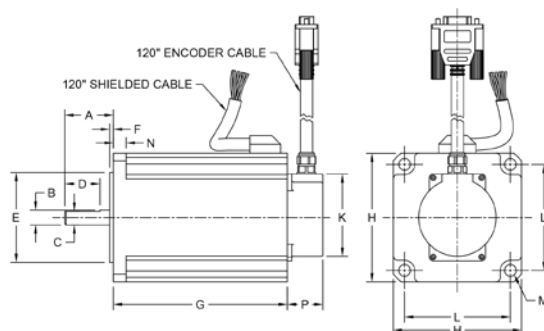
Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A2	MTR-AC23T-753D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	2.20	1.86	0.20	0.19	0.91
A6	MTR-AC23T-754D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	2.20	1.86	0.20	0.19	0.91

OLE-75, -150; Washdown Motor; Encoder



Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A4	MTR-AC23W-753D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.17	2.22	2.20	1.86	0.20	0.19	0.91
A8	MTR-AC23W-754D-S	0.81	0.25	0.23	0.59	1.498/1.502	0.06	2.99	2.22	2.20	1.86	0.20	0.19	0.91
A12	MTR-AC34W-696D-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.20	2.74	0.26	0.39	0.91

OLE-350; Encoder Version



Code	AC Motor	A	B	C	D	E	F	G	H	K	L	M	N	P
A10	MTR-AC34T-696D-S	1.46	0.50	N/A	1.00	2.873/2.877	0.08	4.53	3.38	2.20	2.74	0.26	0.39	0.91

How to Specify

Intellimotor® ITM Specifications



Power Amplifier

Amplifier Type	Dual H-Bridge, 4 Quadrant
Current Control	4 state PWM at 20 KHz
Output Torque	ITM-23Q-2: 125 oz-in with suitable power supply ITM-23Q-3: 210 oz-in with suitable power supply
Power Supply	External 12 - 48 VDC power supply required
Protection	Over-voltage (shutdown at 74VDC), under-voltage (shutdown at 11VDC), over-temp, motor/wiring shorts (phase-to-phase, phase-to-ground).
Idle Current Reduction	Reduction range of 0 – 90% of Running Current after delay selectable in milliseconds.
Ambient Temperature	0 to 40°C (32 - 104°F) (mounted to suitable heatsink)
Humidity	90% non-condensing.

Controller - ITM-23Q

Microstep Resolution	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev.
Anti-Resonance (Electronic Damping)	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time.
Torque Ripple Smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range 0.25 to 1.5 rps
Auto Setup	Measures motor parameters and configures motor current control and anti-resonance gain settings
Self Test	Checks Internal & External Power supply voltages. Diagnoses open motor phases and motor resistance changes >40%.
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps (Step & Direction Mode Only)
Command Signal Smoothing	Software configurable filtering reduces jerk and excitation of extraneous system resonances (Step & Direction Mode Only).

Intellimotor® ITM Specifications

Controller - ITM-23S Models

Non-Volatile Storage	Configurations are saved in FLASH memory on-board the DSP.
Mode of Operation	Step & Direction, CW/CCW, A/B Quadrature, Oscillator, Joystick, SCL streaming commands.
Step and Direction Inputs	<p>STEP +/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3MHz. Function: Step, CW Step, A Quadrature, Encoder Following, CW Limit, CW Jog, START/STOP (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p> <p>DIR +/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: DIR, CCW Step, B Quadrature, Encoder Following, CCW Limit, CCW Jog, Sensor, DIR (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p>
Enable Input	<p>EN +/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: ENABLE, RESET, SPEED 1/SPEED 2 (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs</p>
Output	Optically Isolated, 30V, 40mA MAX. Function: Fault, Motion, Alarm, Tach and general purpose programmable
Analog Input Range	Ain Gnd Range 0 to 5VDC
Analog Input Resolution	12 bits
Communication Interface	RS-232 or RS-485
+ 5 Volt User Output	4.8V to 5.0V @ 50mA Maximum

How to Specify

Intellimotor® ITM Specifications

Controller - ITM-23Q

Inputs	STEP +/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: Step, CW Step, A Quadrature, Encoder Following, CW Limit, CW Jog, START/STOP (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs
	DIR+/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: DIR, CCW Step, B Quadrature, Encoder Following, CCW Limit, CCW Jog, Sensor, DIR (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs
	EN+/- Optically Isolated, 5-24 Volt, 8-12mA. Minimum pulse width = 250 ns. Maximum pulse frequency = 3 MHz. Function: ENABLE, RESET, SPEED 1 /SPEED 2 (Oscillator mode), General Purpose Input. Adjustable bandwidth digital noise rejection filter on all inputs
Output	Optically Isolated, 30V, 40mA MAX. NPN/sinking. Function: Fault, Motion, Alarm, Tach or general purpose programmable
Analog Input	Ain Gnd Range 0 to 5VDC
Analog Input Resolution	12 bits
Communication Interface	ITM-23Q-2-* RS232 ITM-23Q-5-* RS485 ITM-23Q-EIP-* Ethernet/IP
+ 5 Volt User Output	4.8V to 5.0V @ 50ma Maximum

Motor Data

Mass	ITM-23Q-2 = 1lb 14oz ITM-23Q-3 = 2lb 10oz
Rotor Inertia	ITM-23Q-2 = 1.42 oz-in^2 $3.68 \times 10^{-3} \text{ oz-in-sec}^2$ (260 g-cm ²) ITM-23Q-3 = 2.51 oz-in^2 $6.5 \times 10^{-3} \text{ oz-in-sec}^2$ (460 g-cm ²)

Intellimotor® ITM-23Q-*-EIP-*-M12 Connector Diagram

Connection Diagrams - ITM-23Q-*-EIP-*-M12

The ITM-23Q-M12 controller/drive uses three M12 style connectors to make all electrical connections. Bimba recommends Bimba cabled connectors CBL-PWR-M12-□, CBL-IO-M12-□, CBL-EIP-M12-□ for connecting power, I/O and Ethernet/IP connections.

All information and guidance for using and connecting the various I/O and power connections are the same for the M12 version of ITM-23Q as they are for the RS-232 and/or RS-485 versions found throughout the ITM-23Q Hardware Manual. Please heed those instructions.

Wire the IntelliMotor® to the 24 VDC or 48 VDC DC power source. Pin 1 (brown) and Pin 3 (blue) connect to “V+” and Pin 2 (white) and Pin 4 connect to “V-” of your power supply. (Do not apply power until all connections to the drive have been made.)

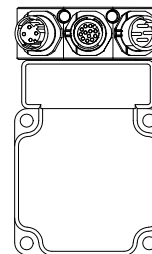
NOTE: the ITM-23Q accepts DC voltages from 24-48 VDC.
(Recommended power supply: Bimba P/N PWR-150A24 or PWR-320A48)

POWER CONNECTION CHART			
PIN	SIGNAL	WIRE	COLOR
1	VDC+	BRN	
2	VDC-	WHT	
3	VDC+	BLU	
4	VDC-	BLK	
METAL HOUSING		SHIELD	

Mating Cable
CBL-PWR-M12-□



REAR VIEW
ETHERNET I/O POWER



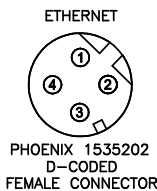
I/O CONNECTION CHART			
PIN	SIGNAL	WIRE	COLOR
1	STEP+	BRN	
2	GND	BLU	
3	STEP-	WHT	
4	EN-	GRN	
5	DIR+	PNK	
6	EN+	YEL	
7	GND	BLK	
8	DIR-	GRY	
9	5V 50ma	RED	
10	AIN	VIO	
11	OUT+	GRY/PNK	
12	OUT-	RED/BLU	
METAL HOUSING		SHIELD	

Mating Cable
CBL-IO-M12-□



ETHERNET CONNECTION CHART				
PIN	SIGNAL	WIRE	COLOR	RJ45
1	TX+	BRN		1
2	RX+	WHT		3
3	TX-	BLU		2
4	RX-	BLK		6
SHIELD		METAL HOUSING		

Mating Cable
CBL-EIP-M12-□



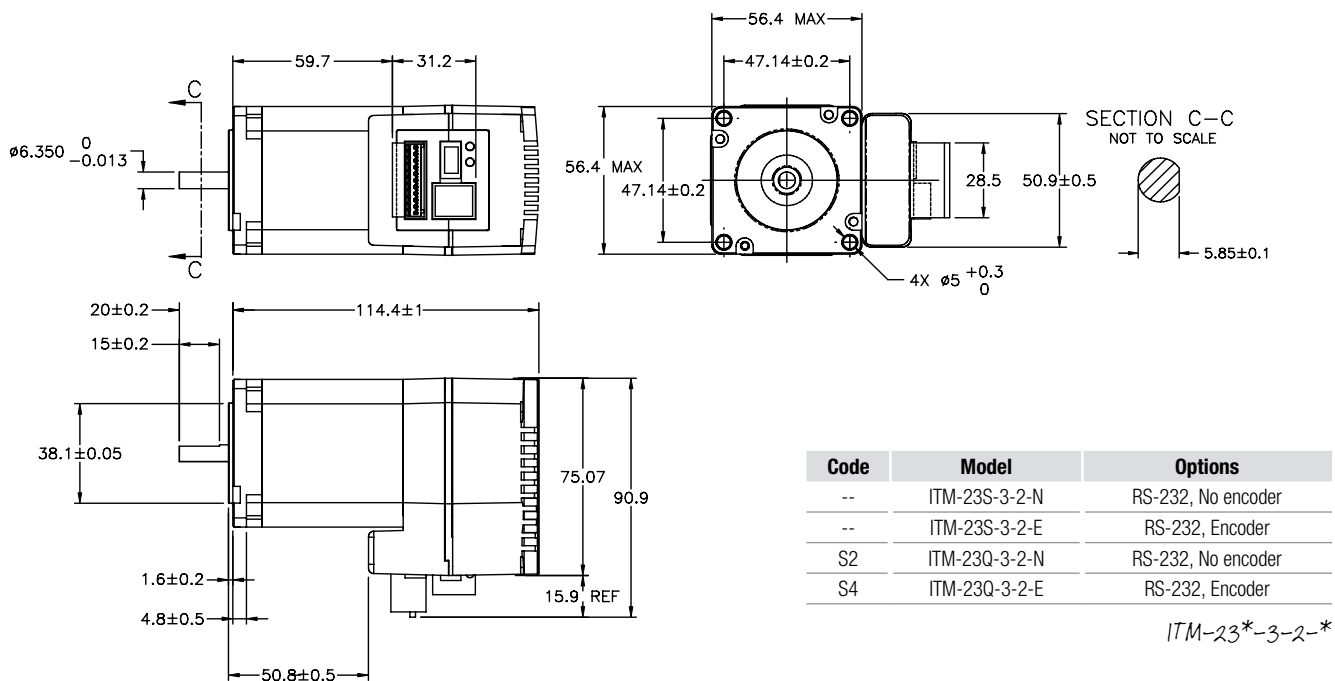
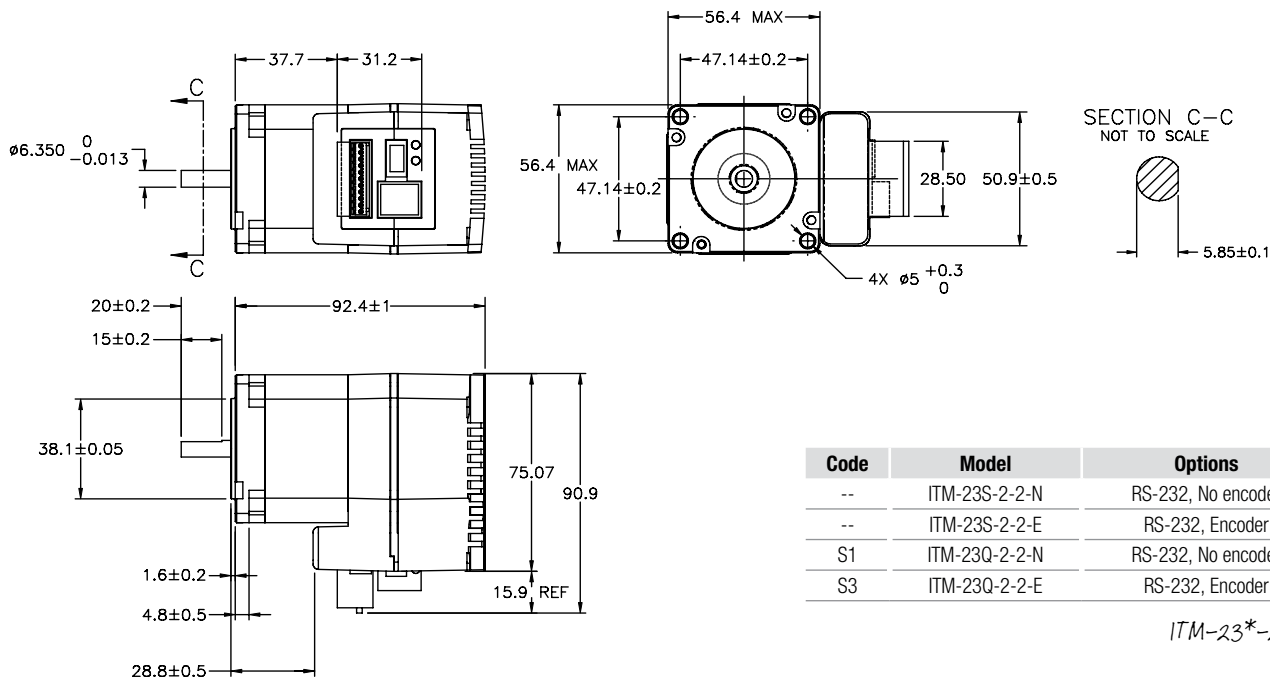
The M12 connector for each of the power, I/O and Ethernet/IP connections are as shown above when viewing the ITM-23Q-M12 from the rear. Similarly the individual conductor connections are identified by pin number, signal definition and wire color shown in the tables. Please follow this wiring information when installing and wiring your ITM-23Q-M12 motor/drive.

How to Specify

Intellimotor® ITM Dimensions

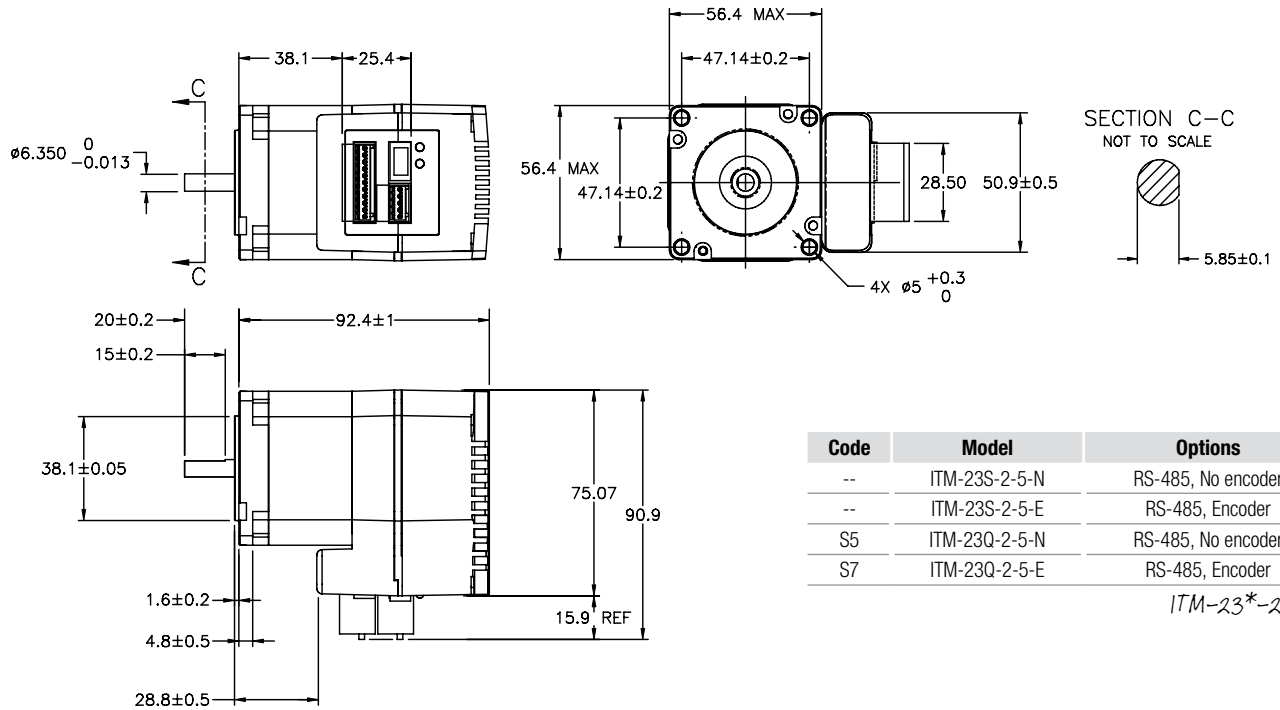
Reference Materials - ITM-23Q

Mechanical Outlines



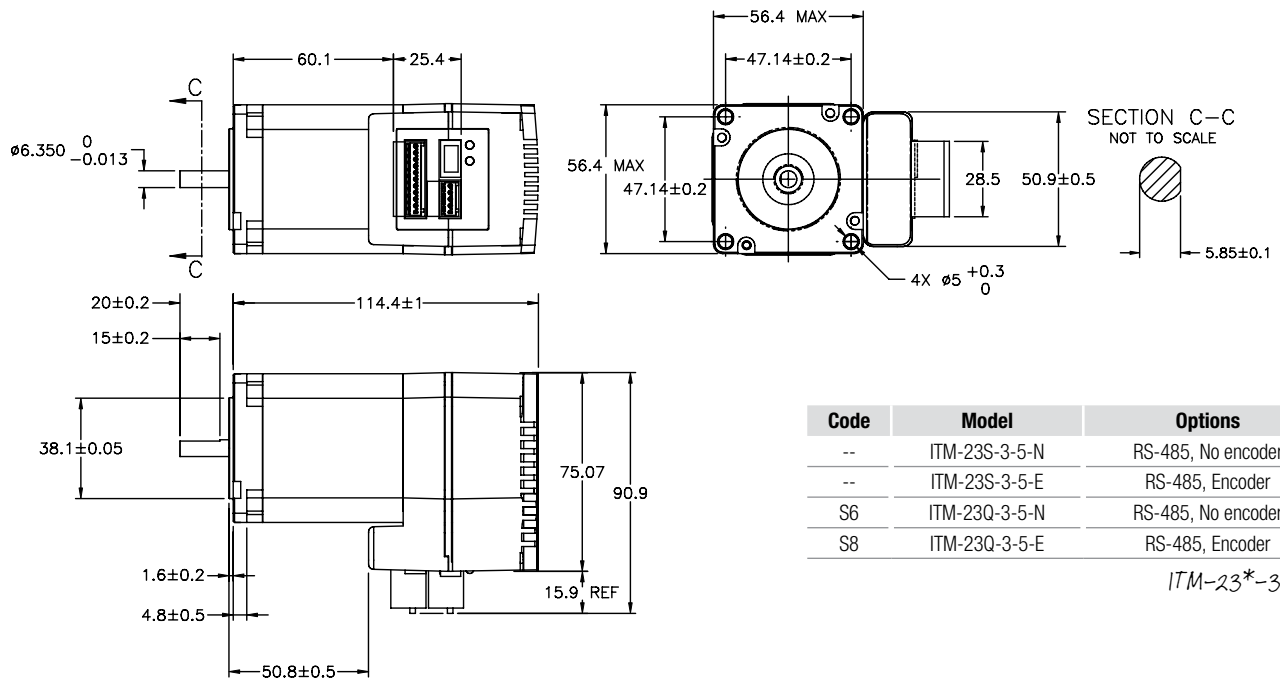
Intellimotor® ITM Dimensions

Mechanical Outlines



Code	Model	Options
--	ITM-23S-2-5-N	RS-485, No encoder
--	ITM-23S-2-5-E	RS-485, Encoder
S5	ITM-23Q-2-5-N	RS-485, No encoder
S7	ITM-23Q-2-5-E	RS-485, Encoder

ITM-23*-2-5-*



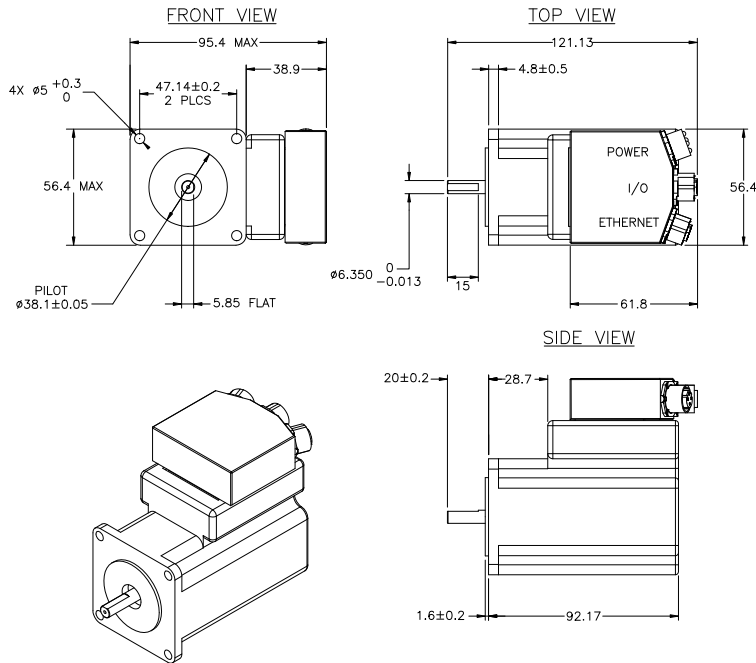
Code	Model	Options
--	ITM-23S-3-5-N	RS-485, No encoder
--	ITM-23S-3-5-E	RS-485, Encoder
S6	ITM-23Q-3-5-N	RS-485, No encoder
S8	ITM-23Q-3-5-E	RS-485, Encoder

ITM-23*-3-5-*

How to Specify

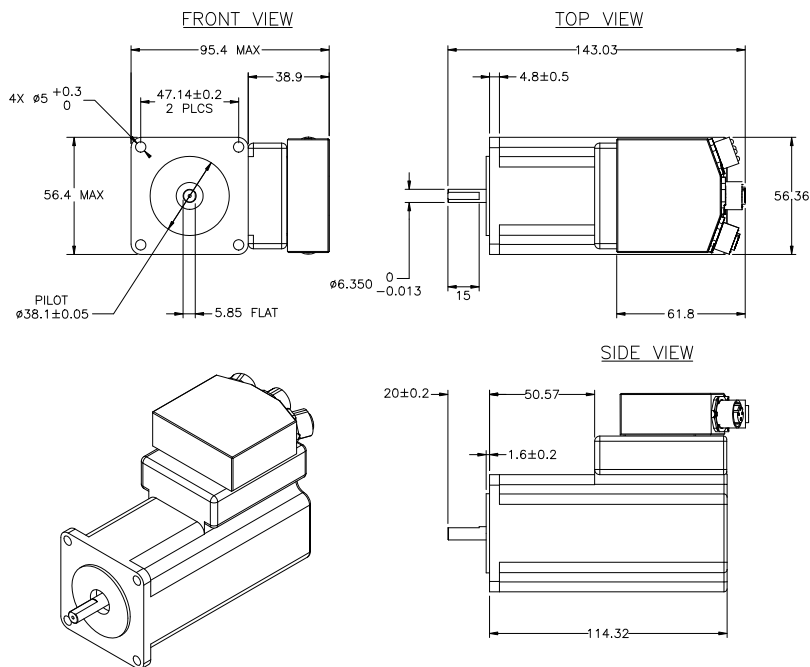
Intellimotor® ITM Dimensions

Mechanical Outlines



Code	Model	Options
S11	ITM-23Q-2-EIP-N-M12	Ethernet/IP, No Encoder
S9	ITM-23Q-2-EIP-E-M12	Ethernet/IP, Encoder

ITM-23Q-2-EIP-*-M12



Code	Model	Options
S12	ITM-23Q-3-EIP-N-M12	Ethernet/IP, No Encoder
S10	ITM-23Q-3-EIP-E-M12	Ethernet/IP, Encoder

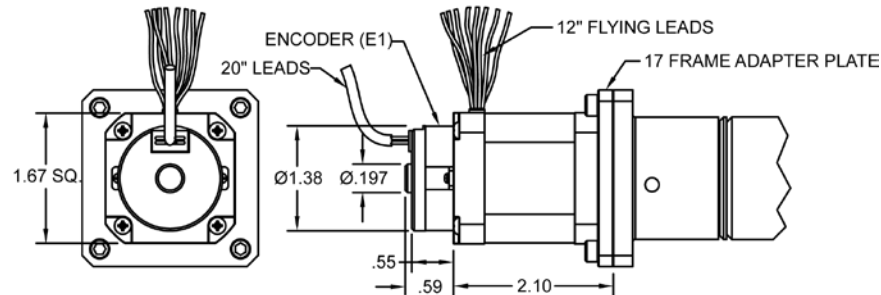
ITM-23Q-3-EIP-*-M12

Dimensions

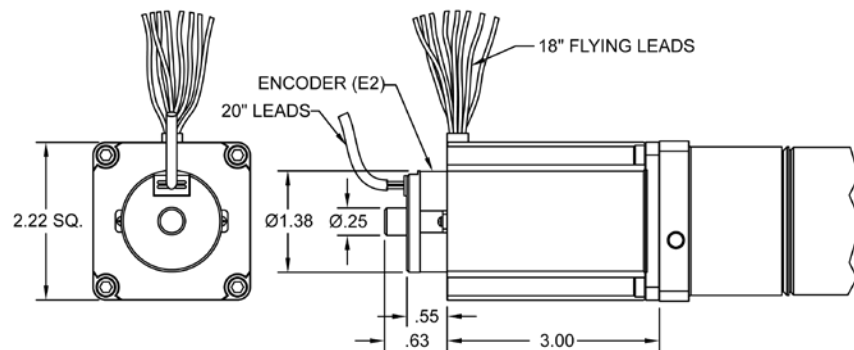
Motor and Encoder (E and Z Options)

Add motor and encoder dimensions below to no motor actuator dimensions.

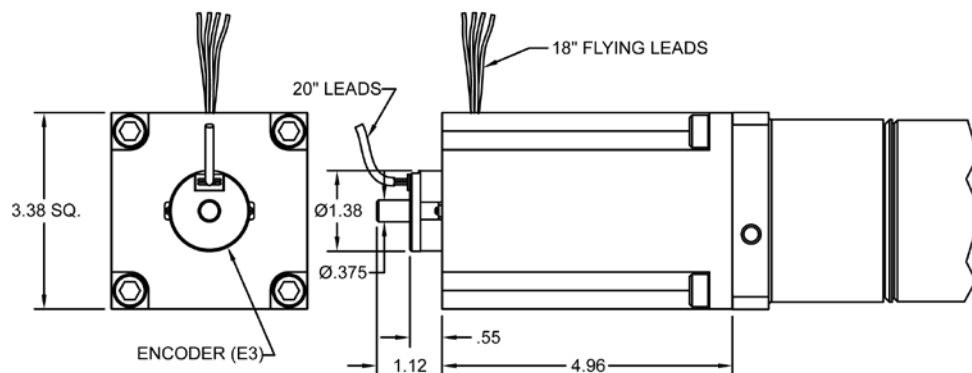
17 Frame Stepper Motor (E1, Z1)



23 Frame Stepper Motor (E2, Z2)



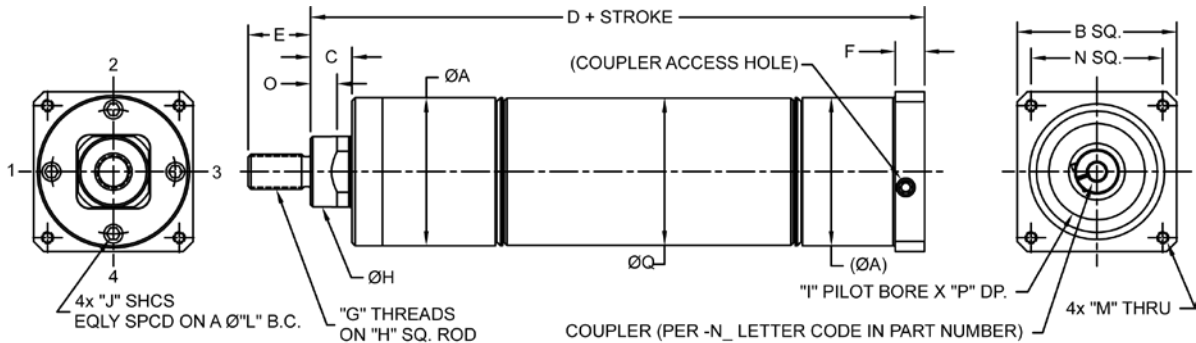
34 Frame Stepper Motor (E3, Z3)



How to Specify

Dimensions

No Motors (N)



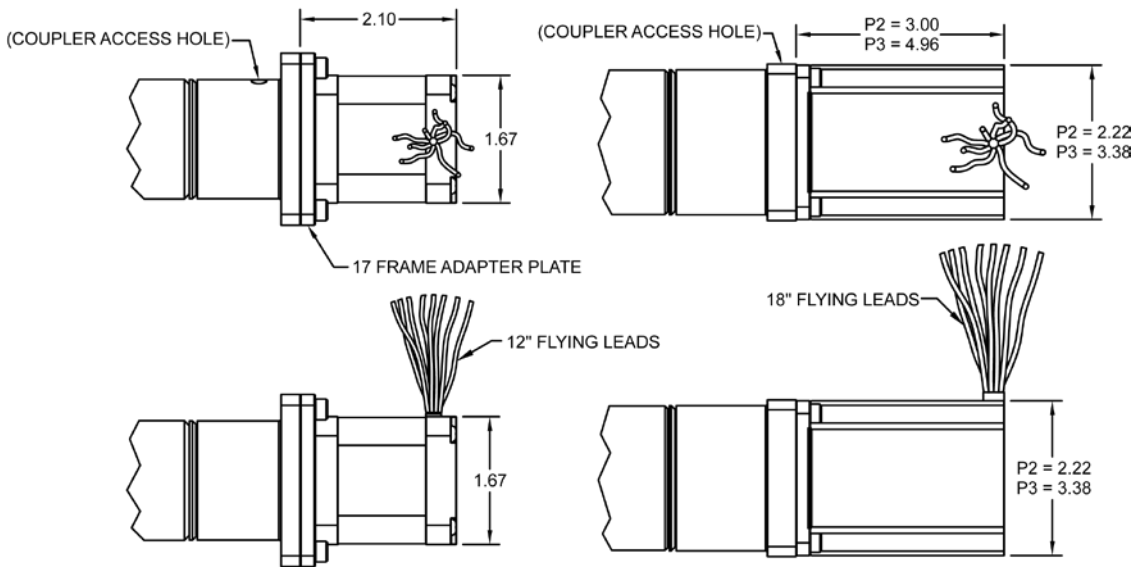
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
75	1.56	2.25	0.58	5.75	1.00	0.25	7/16-20 UNF	0.74	1.502	#8-32 UNC	0.30	1.25	#8-32 UNC	1.86	0.21	0.13	1.56
150	2.09	2.25	0.59	7.84	0.88	0.42	1/2-20 UNF	1.00	1.502	#10-24 UNC	0.38	1.75	#8-32 UNC	1.86	0.30	0.13	2.07
350	3.13	3.39	0.87	10.11	1.13	0.55	3/4-16 UNF	1.50	2.878	1/4-20 UNC	0.50	2.50	#10-24 UNC	2.74	0.38	0.15	3.10

Motors (P1, P2, P3, and Y1, Y2, Y3 Options)

Add motor dimensions to no motor actuator dimensions.

17 Frame Stepper Motor (P1)

23 and 34 Frame Stepper Motor (P2/P3)



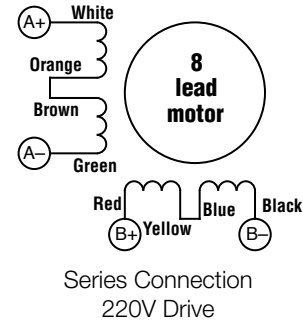
Wiring Diagrams and Specifications

Motor Schematics

(supplied with A1 through A12 options)

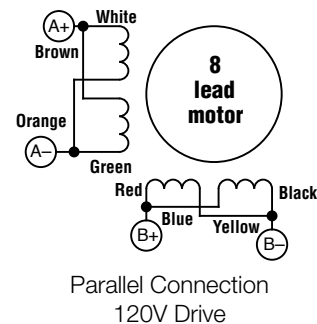
Step Table and Wiring Diagram Series Configuration				
Step	White	Green	Red	Black
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing
mounting end



Step Table And Wiring Diagram Parallel Configuration				
Step	White	Green	Red	Black
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing
mounting end



Connect the drive to the motor. If you are using one of the recommended Bimba motors, connect the motor in parallel to the STP-AC5-*-1 and in series to the STP-AC5-*-2, as shown above. Be sure to connect the motor case ground to the STP-AC5 ground terminal.Ⓢ

For a non-Bimba motor, please refer to your motor specs for wiring information.

Specifications for Bimba 8-lead 1.8 degree stepper motors are provided in the following table.

Frame	Model Number	Code	Winding Connection	Minimum Holding Torque (oz-in)	Potential (Volts)	Current (Amps)	Resistive (Ohms)	Inductance (mH)	Rotor Inertia (oz-In ² /g-cm ²)
23	MTR-AC23*-753*-S	A1 through A4	Parallel	167	2.9	1.41	3.6	12.8	1.64/300
			Series	167	5.6	0.71	14.4	51.2	1.64/300
23	MTR-AC23*-754*-S	A5 through A8	Parallel	255	2.1	1.41	4.5	15.2	2.62/480
			Series	255	4.2	0.71	18.0	60.8	2.62/480
34	MTR-AC34*-696*-S	A9 through A12	Parallel	1110	2.72	4.10	1.2	10.5	17.49/3200
			Series	1110	5.43	2.05	4.9	42	17.49/3200

Ⓢ A+ A- B+ B-



To Motor Case

BIMBA STP-AC5
DRIVE CONNECTOR

How to Specify

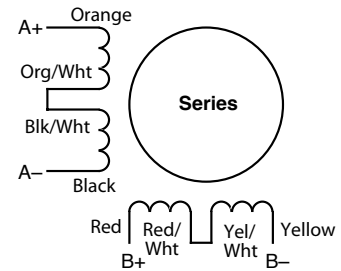
Wiring Diagrams and Specifications

Motor Schematics

(supplied with P, E, Y, and Z options)

Step Table and Wiring Diagram Series Configuration				
Step	Orange	Black	Red	Yellow
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

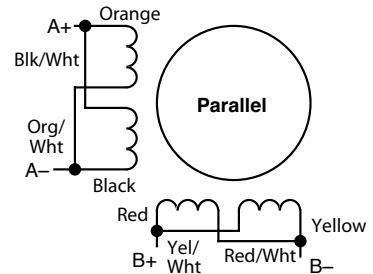
CW facing mounting end



CCW facing mounting end

Step Table and Wiring Diagram Parallel Configuration				
Step	Orange	Black	Red	Yellow
0	+	-	+	-
1	-	+	+	-
2	-	+	-	+
3	+	-	-	+
4	+	-	+	-

CW facing mounting end



Specifications for Bimba 8-lead 1.8 degree stepper motors are provided in the following table.

Frame	Winding Connection	Minimum Holding Torque (oz-in)	Potential (Volts)	Current (Amps)	Resistive (Ohms)	Inductance (mH)	Rotor Inertia (oz-in ² /g-cm ²)
17	Parallel	62.3	2.9	1.70	1.7	2.5	0.44/82
	Series	62.3	5.6	0.85	6.6	10.0	0.44/82
	Unipolar	43.9	4.0	1.20	3.3	2.5	0.44/82
23	Parallel	177	2.1	4.2	0.37	1.2	1.64/300
	Series	177	4.2	2.1	1.5	4.8	1.64/300
	Unipolar	125	3.0	3.0	0.75	1.2	1.64/300
23	Parallel	269.1	2.1	4.24	0.5	1.7	2.51/460
	Series	269.1	4.2	2.12	2.0	6.8	2.51/460
	Unipolar	191.2	3.0	3.0	1.0	1.7	2.51/460
34	Parallel	1260	2.72	5.6	0.48	5.4	15.0/2750
	Series	1260	5.43	2.8	1.94	21.6	15.0/2750
	Unipolar	906	3.88	4.0	0.97	5.4	15.0/2750

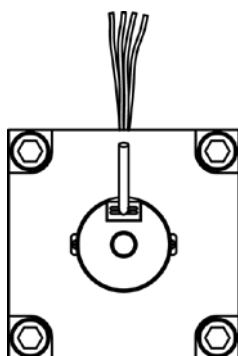
Connections and Specifications

Encoder

(supplied with E and Z options and A2, A4, A6, A8, A10, A12)

Encoder Connections, All Steppers

Encoder connections for all Bimba steppers with encoders are identified below. The cable provided has flying leads which can be connected to your controller.



Pin No.	Wire Color	Function
1	Yellow	Channel A
2	Yellow/White	Channel A-
3	Blue	Channel B
4	Blue/White	Channel B-
5	Orange	Index
6	Orange/White	Index-
7	Green	Not used
8	Green/White	
9	Brown	
10	Brown/White	
11	White	
12	Gray/White	+5 V DC input power
13	Red	
14	Black	
15	Gray	Encoder ground
		Drain/shield

Encoder Specifications

If you have ordered your actuator with a motor/encoder combination, the encoder specifications are listed below.

Power Input	5 V DC, 160 mA
Resolution	2000 pulses per rev. or 8000 pulses, post quadrature
Output High	2.5 V DC Min.
Output Low	0.5 V DC Max.
Operating Frequency	500 kHz Max.
Operating Temperature	-30 to 115°C
Enclosure Rating	IP40

Brake

(supplied with K1, K2, and K3 options)

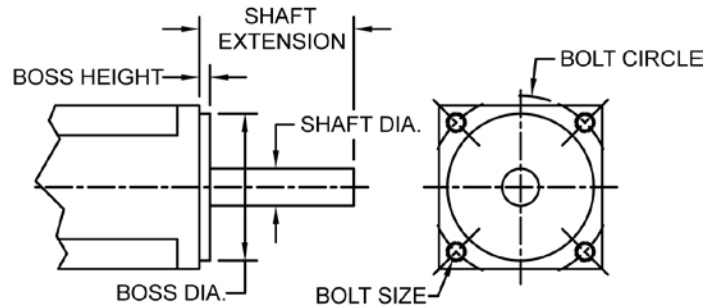
Bimba K_-option brakes are available only when ordered with compatible Bimba stepper motors as part of an OLE actuator model. They are not available if the no-motor actuator option is selected. With no power applied to the brake, motor shaft and actuator screw rotation are immobilized to the limit of the holding torque specification in the table below. To release the shaft and screw and allow rotation, the operating voltage (24 VDC) must be applied to the two brake leads.

Brake Option	Nema Size	Holding Torque (oz-in)	Inertia (oz-in ²)	Operating Voltage	Resistance (Ohms)	Current Draw (Amps)
K1	17	16	0.0384	24 VDC	117	0.220
K2	23	48	0.1392	24 VDC	132	0.182
K3	34	240	1.792	24 VDC	65.1	0.369

How to Specify

Motor Compatibility Chart

For selecting the right actuator with other brands of motors:



Stepper Motors

Ordering Information					Performance with 1/2" lead		Motor Performance	
Stepper Brand	Stepper Model	Motor Size	Actuator P/N	Adapter P/N	Thrust (lbs)	Speed (in/sec)	Max Torque (in-oz)	Max Speed (RPM)
Applied Motion	HT23-601	23	OLET-150x-(50)x-NC	None Required	135	0.5	210	2400
Applied Motion	HT34-478	34	OLET-350x-(50)x-NF	None Required	350	0.5	1284	2400
Lin	4118C-01	17	OLET-75x-(50)x-NA	D-109957	TBD	TBD	102.8	900
Lin	5718L-03P	23	OLET-150x-(50)x-NC	None Required	45	5	210	1200
Lin	8718L-08P	34	OLET-350x-(50)x-NF	None Required	185	2	1000	720
Sanyo Denki	103H5210-52	17	OLET-75x-(50)x-NA	D-109957	20	0.5	70	3000
Sanyo Denki	103H7128	23	OLET-150x-(50)x-NC	None Required	75	0.5	300	1583
Sanyo Denki	SM2863-522	34	OLET-350x-(50)x-NG	None Required	TBD	TBD	1100	2100

Motor Mounting Dimensions										
Stepper Brand	Stepper Model	Motor Size	Actuator P/N	Adapter P/N	Shaft Diameter (in)	Shaft Extension (in)	Boss Diameter (in)	Boss Height (in)	Bolt Size	Bolt Circle
Applied Motion	HT23-601	23	OLET-150x-(50)x-NC	None Required	0.25	0.787	1.499/1.501	0.063	0.205	1.86 Sq
Applied Motion	HT34-478	34	OLET-350x-(50)x-NF	None Required	0.50	1.46	2.874/2.876	0.08	0.26	2.74 Sq
Lin	4118C-01	17	OLET-75x-(50)x-NA	D-109957	5mm (.1968)	0.94	0.864/0.866	0.08	M3 Tapped	1.22 Sq
Lin	5718	23	OLET-150x-(50)x-NC	None Required	0.25	0.81	1.499/1.501	0.06	0.2	1.86 Sq
Lin	8718	34	OLET-350x-(50)x-NF	None Required	0.50	1.46	2.874/2.876	0.08	0.26	2.74 Sq
Sanyo Denki	103H5210-52	17	OLET-75x-(50)x-NA	D-109957	5mm (.1968)	0.94	0.868/0.870	0.06	M3 Tapped	1.22 Sq
Sanyo Denki	103H7128	23	OLET-150x-(50)x-NC	None Required	0.25	0.81	1.499/1.501	0.06	.18/.2	1.86 Sq
Sanyo Denki	SM2863-522	34	OLET-350x-(50)x-NG	None Required	14mm (.551)	1.18	2.874/2.876	0.06	0.22	2.74 Sq

Motor Compatibility Chart

For selecting the right actuator with other brands of motors:

Servo Motors

Ordering Information				Performance with 1/2 inch lead		Motor Performance	
Servo Brand	Servo Model	Actuator P/N	Adapter P/N	Thrust (lbs)	Speed (in/sec)	Max Torque (in-oz)	Max Speed (RPM)
Allen Bradley	TLY-A130T-AA	OLET-150x-(50)x-ND	D-109958	29	50	46	6000
Allen Bradley	TLY-A130T-AN	OLET-75x-(50)x-NC	D-109968	29	50	46	6000
Allen Bradley	TLY-A230T-AN	OLET-350x-(50)x-NE	D-109959	117	50	184	6000
Allen Bradley	TLY-A2540P	Special1	Special			416	5000
Lin	BL17B40	OLET-75x-(50)x-NA	D-109960	26	33	41	4000
Lin	BL24B46-01	OLET-150x-(50)x-NC	None Required	54	33	87.8	4000
Lin	BL25B19-01	OLET-150x-(50)x-NC	Special	21	33	34	4000
Mitsubishi	HC-KFS13	OLET-150x-(50)x-ND	D-109958	28	25	45	3000
Mitsubishi	HC-KFS43	OLET-350x-(50)x-NG	D-109959	114	25	184	3000
Mitsubishi	HC-KFS73	Special1	Special	221	25	340	3000
Mitsubishi	HC-MFS053(B)	OLET-150x-(50)x-ND	D-109958	27	25	22.6	3000
Mitsubishi	HC-MFS43(B)	OLET-350x-(50)x-NG	D-109959	155	25	184	3000
Mitsubishi	HC-MFS73	Special1	Special			339	3000
Panasonic	MSMD5A_1_	OLET-150x-(50)x-ND	D-111352	14	42	68	5000
Panasonic	MSMD01_1_	OLET-150x-(50)x-ND	D-111352	28	42	136	5000
Panasonic	MSMD021_1_	OLET-350x-(50)x-NH	D-111353	52	42	272	5000
Panasonic	MSMD041_1_	OLET-350x-(50)x-NG	D-111353	105	42	552	5000
Sanyo Denki	Q1AA06040D	OLET-350x-(50)x-NG	D-109959	111	25	180	3000
Sanyo Denki	Q2EA04010D	OLET-150x-(50)x-NB	D-109958	28	25	45	3000
Sanyo Denki	Q2AA08100D	Special1	Special	293	25	450	3000
Yaskawa	SGMJV-01A	OLET-150x-(50)x-ND	D-109958	28	25	67.5	3000
Yaskawa	SGMJV-04A	OLET-350x-(50)x-NG	D-109959	111	25	247	3000

Motor Mounting Dimensions									
Servo Brand	Servo Model	Actuator P/N	Adapter P/N	Shaft Diameter (in)	Shaft Extension (in)	Boss Diameter (in)	Boss Height (in)	Bolt Size	Bolt Circle
Allen Bradley	TLY-A130T-AA	OLET-150x-(50)x-ND	D-109958	8mm	0.98	1.180 / 1.181	0.1	0.177	1.811
Allen Bradley	TLY-A130T-AN	OLET-75x-(50)x-NC	D-109968	0.25	1.063	0.866	0.08	8-32 Tapped	1.725
Allen Bradley	TLY-A230T-AN	OLET-350x-(50)x-NE	D-109959	12mm	1.181	1.967 / 1.968	0.12	0.26	2.76
Allen Bradley	TLY-A2540P	Special1	Special	16mm(.630)	1.378	2.754 / 2.755	0.12	0.26	3.94
Lin	BL17B40	OLET-75x-(50)x-NA	D-109960	5mm	0.83	0.988	0.12	M4	1.00 Sq
Lin	BL24B46-01	OLET-150x-(50)x-NC	Not Required	0.25	0.81	1.499 / 1.500	0.06	0.2	1.86 Sq
Lin	BL25B19-01	OLET-150x-(50)x-NC	Special	0.25	0.81	2.124 / 2.128	0.06	0.2	1.95 Sq
Mitsubishi	HC-KFS13	OLET-150x-(50)x-ND	D-109958	8mm	0.98	1.180 / 1.181	0.098	0.177	1.811
Mitsubishi	HC-KFS43	OLET-350x-(50)x-NG	D-109959	14mm (.551)	1.181	1.967 / 1.968	0.118	0.228	2.755
Mitsubishi	HC-KFS73	Special1	Special	19mm (.748)	1.575	2.755 / 2.756	0.118	0.26	3.543
Mitsubishi	HC-MFS053 (B)	OLET-150x-(50)x-ND	D-109958	8mm	0.94	1.181	0.098	0.177	1.811
Mitsubishi	HC-MFS43 (B)	OLET-350x-(50)x-NG	D-109959	14mm (.551)	1.181	1.967 / 1.968	0.118	0.228	2.756
Mitsubishi	HC-MFS73	Special1	Special	19mm (.748)	1.574	2.754 / 2.755	0.118	0.26	3.543
Panasonic	MSMD5A_1_	OLET-150x-(50)x-ND	D-111352	8 mm	30 mm	1.811	0.12	0.13	1.181
Panasonic	MSMD01_1_	OLET-150x-(50)x-ND	D-111352	8 mm	30 mm	1.811	0.12	0.13	1.181
Panasonic	MSMD021_1_	OLET-350x-(50)x-NH	D-111353	11 mm	50 mm	1.969	0.12	0.18	2.756
Panasonic	MSMD041_1_	OLET-350x-(50)x-NG	D-111353	14 mm	50 mm	1.969	0.12	0.18	2.756
Sanyo Denki	Q1AA06040D	OLET-350x-(50)x-NG	D-109959	14mm(.551)	1.181	1.967 / 1.968	0.118	0.216	2.755
Sanyo Denki	Q2EA04010D	OLET-150x-(50)x-NB	D-109958	6mm	0.98	1.180 / 1.181	0.098	0.177	1.811
Sanyo Denki	Q2AA08100D	Special1	Special	16mm(.630)	1.378	3.148 / 3.150	0.118	0.26	3.937
Yaskawa	SGMJV-01A	OLET-150x-(50)x-ND	D-109958	8mm	0.984	1.181	0.098	0.169	1.811
Yaskawa	SGMJV-04A	OLET-350x-(50)x-NG	D-109959	14mm (.551)	1.181	1.967 / 1.968	0.118	0.216	2.756

How to Accessorize

Accessories

Stepper Cables

Bimba Part Number	Description
CBL-3004-189	Serial Programming Cable for RS232 Ports
CBL-3004-195-10	Encoder Extension Cable
CBL-PWR-M12-5	M12 Power Cable, 5m
CBL-IO-M12-5	M12 I/O Cable, 5m
CBL-EIP-M12-5	M12 Ethernet/IP Cable, 5m

Power Supply

Bimba Part Number	Description
PWR-150A24	24VDC, 150W Power Supply
PWR-320A48	48VDC, 320W Power Supply

Intellimotor® Integrated DC Stepper Motor/Drive

Bimba Part Number	Description	Bimba Motor Code
ITM-23Q-2-2-N	NEMA23-2, RS232, Programmable, 125 oz-in	S1
ITM-23Q-3-2-N	NEMA23-3, RS232, Programmable, 210 oz-in	S2
ITM-23Q-2-2-E	NEMA23-2, RS232, Encoder, Programmable, 125 oz-in	S3
ITM-23Q-3-2-E	NEMA23-3, RS232, Encoder, Programmable, 210 oz-in	S4
ITM-23Q-2-5-N	NEMA23-2, RS485, Programmable, 125 oz-in	S5
ITM-23Q-3-5-N	NEMA23-3, RS485, Programmable, 210 oz-in	S6
ITM-23Q-2-5-E	NEMA23-2, RS485, Encoder, Programmable, 125 oz-in	S7
ITM-23Q-3-5-E	NEMA23-3, RS485, Encoder, Programmable, 210 oz-in	S8
ITM-23Q-2-EIP-E-M12	NEMA23-2, Ethernet/IP, Encoder, Programmable, M12 Connector, 125 oz-in	S9
ITM-23Q-3-EIP-E-M12	NEMA23-3, Ethernet/IP, Encoder, Programmable, M12 Connector, 210 oz-in	S10
ITM-23Q-2-EIP-N-M12	NEMA23-2, Ethernet/IP, Q Programmable, M12 Connector, 125 oz-in	S11
ITM-23Q-3-EIP-N-M12	NEMA23-3, Ethernet/IP, Q Programmable, M12 Connector, 210 oz-in	S12

AC Stepper Motors

Bimba Part Number	Description	Bimba Motor Code
MTR-AC23T-753-S	10' Shielded Boot Cable, 167 oz-in	A1
MTR-AC23T-753D-S	10' Shielded Boot and Cable Gland Encoder, 167 oz-in	A2
MTR-AC23W-753-S	IP65, 10' Shielded Cable and Cable Gland Encoder	A3
MTR-AC23W-753D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A4
MTR-AC23T-754-S	10' Shielded Boot Cable, 255 oz-in	A5
MTR-AC23T-754D-S	10' Shielded Boot and Cable Gland Encoder, 255 oz-in	A6
MTR-AC23W-754-S	IP65, 10' Shielded Cable and Cable Gland	A7
MTR-AC23W-754D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A8
MTR-AC34T-696-S	10' Shielded Boot Cable, 1110 oz-in	A9
MTR-AC34T-696D-S	10' Shielded Boot and Cable Gland Encoder, 1110 oz-in	A10
MTR-AC34W-696-S	IP65, 10' Shielded Cable and Cable Gland	A11
MTR-AC34W-696D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	A12

NOTE: Torque values in "oz-in" are peak torque values.
Inventory items noted in BOLD.

Bimba Motor Codes are used when Bimba electric actuators are ordered with a Bimba stepper or servo motor. The Bimba Motor Code becomes part of the electric actuator nomenclature.

Not all Bimba motor codes may be used with all available electric actuators.

When ordering only a motor, use the complete Bimba Part Number, as listed above.

How to Order

DC Stepper Motors

Bimba Part Number	Description	Bimba Motor Code
MTR-DC17T-275-F	Flying Leads, 78 oz-in	P1
MTR-DC17T-275D-F	Flying Leads with Encoder, 78 oz-in	E1
MTR-DC23T-598-F	Flying Leads, 158 oz-in (for OLE-75)	P2
MTR-DC23T-598D-F	Flying Leads with Encoder, 158 oz-in (for OLE-75)	E2
MTR-DC23T-601-F	Flying Leads, 269 oz-in (for OLE-150)	P2
MTR-DC23T-601D-F	Flying Leads with Encoder, 269 oz-in (for OLE-150)	E2
MTR-DC34T-506-F	Flying Leads, 1260 oz-in	P3
MTR-DC34T-506D-F	Flying Leads with Encoder, 1260 oz-in	E3
MTR-DC23T-598-S	Cable, No Encoder, 158 oz-in	P6
MTR-DC23T-598D-S	Cable with Encoder Cover, 158 oz-in	E6
MTR-DC23W-598-S	IP65, 10' Shielded Cable and Cable Gland	P7
MTR-DC23W-598D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E7
MTR-DC23T-601-S	10' Shielded Cable, No Encoder, 269 oz-in	P8
MTR-DC23T-601D-S	Cable with Encoder Cover, 269 oz-in	E8
MTR-DC23W-601-S	IP65, 10' Shielded Cable and Cable Gland	P9
MTR-DC23W-601D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E9
MTR-DC34T-506-S	Cable, No Encoder, 1260 oz-in	P10
MTR-DC34T-506D-S	Cable with Encoder Cover, 1260 oz-in	E10
MTR-DC34W-506-S	IP65, 10' Shielded Cable and Cable Gland	P11
MTR-DC34W-506D-S	IP65, 10' Shielded Cable, Cable Gland and Encoder	E11

NOTE: Inventory items noted in BOLD

Bimba Motor Codes are used when Bimba electric actuators are ordered with a Bimba stepper or servo motor. The Bimba Motor Code becomes part of the electric actuator nomenclature.

Not all Bimba motor codes may be used with all available electric actuators.

When ordering only a motor, use the complete Bimba Part Number, as listed above.

Stepper Drives

DC Programmable Stepper Drives

Bimba Part Number	Description
STP-10-2-N-Q	10 Amp, RS232, Programmable
STP-10-2-E-Q	10 Amp, RS232, Encoder, Programmable
STP-10-5-N-Q	10 Amp, RS485, Programmable
STP-10-5-E-Q	10 Amp, RS485, Encoder, Programmable
STP-10-EIP-N-Q	10 Amp, EthernetIP, Programmable
STP-10-EIP-E-Q	10 Amp, EthernetIP, Encoder, Programmable

AC Programmable Stepper Drives

Bimba Part Number	Description
STP-AC5-EIP-1-E-Q	AC120 Step, 5A, EthernetIP, Encoder
STP-AC5-EIP-2-E-Q	AC220 Step, 5A, EthernetIP, Encoder
STP-AC5-EIP-1-N-Q	AC120 Step, 5A, EthernetIP
STP-AC5-EIP-2-N-Q	AC220 Step, 5A, EthernetIP
STP-AC5-E-1-E-S	AC120 Step, 5A, Ethernet, Encoder, Streaming
STP-AC5-E-2-E-S	AC220 Step, 5A, Ethernet, Encoder, Streaming
STP-AC5-E-1-N-S	AC120 Step, 5A, Ethernet, Streaming
STP-AC5-E-2-N-S	AC220 Step, 5A, Ethernet, Streaming

DC Stepper and Direction Drives

Bimba Part Number	Description
DRV-4	24/48 VDC, 4.5A Step and Direction
DRV-8	24/48 VDC, 8A Step and Direction

Inventory items noted in **BOLD**.

Stepper drives are ordered as separate line items; Y1, Y2, Y3, Z1, Z2, and Z3 are the exceptions. In those cases, the drive is included.

How to Repair

Bimba motors and controls may be repairable. However, motors and controls are not field-repairable. While Bimba motors and controls are intended for long-life, if a device is in need of repair and is able to be repaired, the unit must be returned to Bimba for the repair.

Should a repair be needed, please note the part number and serial number, and contact Bimba Customer Service at (800) 442-4622 (800.44.BIMBA) or e-mail cs@bimba.com.

Some of the options that can be uniquely added to an OLE actuator as a Bimba "special" or customization are shown below. Please contact your Bimba Customer Service representative at (800) 442-4622 (800.44.BIMBA) or email cs@bimba.com for additional details and information.

NOTE: Not all customizations are available for every type. Contact Bimba Customer Service for details.

Common Customizations

- > Stainless Steel
- > IP65 or IP66 washdown
- > Specialized motor mount adapters
- > Brakes
- > Low backlash designs
- > Special motors
- > RoHS compliant
- > Alternative leads
- > Unique mounting
- > Rod end plates
- > Brass nuts
- > Servo motors

Mitsubishi Servo Motors and Amplifiers

Bimba partners with Mitsubishi® Electric to provide high performing servo motors. We offer various models from small to medium and large capacities with low inertia as well as options available for high throughput, high acceleration/ deceleration operations, material handling systems, robots, and X-Y tables.



Contents

43 Servo Motors Overview

45 Specifications

- 45 – MR-J4 Series
- 58 – HG-KR Series
- 59 – HG-JR Series

63 Motor Selection

- 63 – Combination Motor and Amplifiers
- 65 – J4 Servo Amplifier Cables and Connectors
- 69 – J4 Servo Motor Cables and Connectors
- 71 – Encoder Cables and Connectors

72 Motor Power Supply Cables

- 74 – Power Cables and Brake Cables
- 74 – Brake Connector Set

74 Shaft Details and Motor Dimensions

- 74 – HG-KR Series
- 75 – HG-JR Series

Servo Motors and Amplifiers Overview

Description		MR-J4
Input	Main AC Input Voltage	100/200/400 VAC
	Control AC Input Voltage	Same as above
	AC100V Compatible	100~400W
	Single-Phase AC200V Compatible	700W or less
Output	Control Method	Sine-wave PWM control, Current Control Method
	Motor Capacity (Rotary Motor)	.05-55KW
Control	Main Control Function	Position, Speed, Torque Control Change mode
	Frequency Response	2.5kHz
	Automatic Tuning Function	Advanced One Touch Tuning
	Vibration Suppression	Advanced Vibration Control II
	Disturbance Compensation	Advanced vibration suppression control II; Robust filter (vs. conventional low pass); Expanded machine resonance suppression filter (total five filters); Vibration tough drive for filter readjustment; With B system, optical fiber cabling dramatically strengthens noise immunity
	Built-In Positioning	Point Table, Program, Indexing Modes, Simple Cam Function, Encoder following (A-RJ)
	Fully-Closed System	Standard
I/O	Maximum Frequency of Input Pulse Train (MR-J4XA)	4Mpps, Differential line driver 200kpps, Open Collector
	Number of Digital Inputs	(Min, max) (4, 10) depending on type
	Number of Digital Outputs	Max 5 Outputs (Depends on control mode)
	Sink/Source	Both available
	Analog Input (A Type)	2ch
	Pulse Train Output (A Type)	Differential line driver, Z phase open-collector
	Interfacing To External Devices	USB (all models)/RS-422(A)
Comm	Network	SSCNETIII/H, SSCNETIII, CC-Link IE Field, EtherCAT, EtherNet/IP, PROFINET

Product Features

MR-J4 Servo Motors and Amplifiers Overview

The MR-J4 provides the highest power, performance, and flexibility in the Mitsubishi Electric lineup and is available from 50W-55KW. Additional features include advanced one-touch auto tuning and advanced vibration suppression control II functions. The MR-J4 motors have the same flange sizes and use the same power encoder and brake cables as the MR-J3 for easy migration from the previous generation of servo amplifiers. The MR-J4 is easily setup and sized with M-Size sizing software and MR-Configurator2 configuration software.

MR-J4 Amplifiers

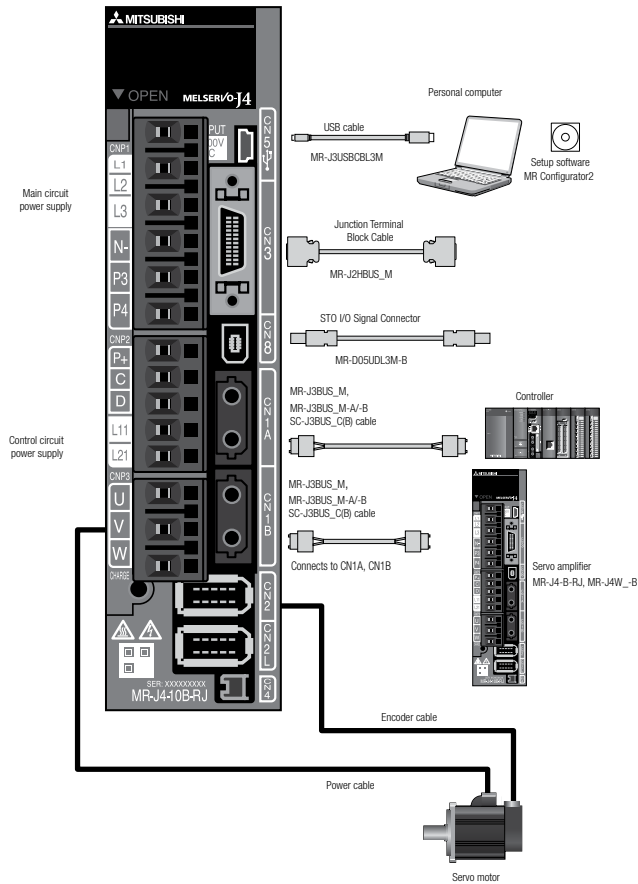
X = Compatible
- = Not Compatible

Type (*4)		Number of Control Axes	Power Supply	Rated Output (kW) (*1)	Interface							Control Mode					Compatible Motor Series		
					SSCNET III / H	CC-Link IE Field	Pulse Train	Analog Voltage	RS-422 Multi-Drop	EtherCAT®	EtherNet/IP™	PROFINET®	Position	Speed	Torque	Positioning Function	Fully Closed Loop Control (*2)	HG-KR	HG-JR
CC-Link IE Field Interface	MR-J4-GF-RJ	1 axis	3-Phase 200VAC	0.1, 0.2, 0.4, 0.6, 0.75, 1, 2, 3.5, 5	-	X	-	-	-	-	-	X	X	X	X	X	X	X	
			3-Phase 400VAC	0.6, 1, 2, 3.5, 5	-	X	-	-	-	-	-	X	X	X	X	X	-	X	
SSCNET III/H Interface	MR-J4-B(-RJ)	1 axis	1-Phase 100VAC	0.1, 0.2, 0.4	X	-	-	-	-	-	-	X	X	X	-	X	X	-	
			3-Phase 200VAC	0.1, 0.2, 0.4, 0.6, 0.75, 1, 2, 3.5, 5	X	-	-	-	-	-	-	X	X	X	-	X	X	X	
			3-Phase 400VAC	0.6, 1, 2, 3.5, 5	X	-	-	-	-	-	-	X	X	X	-	X	-	X	
	MR-J4W2-B	2 axes	3-Phase 200VAC	0.2, 0.4, 0.75, 1	X	-	-	-	-	-	-	X	X	X	-	X	X	X	
	MR-J4W3-B	3 axes	3-Phase 200VAC	0.2, 0.4	X	-	-	-	-	-	-	X	X	X	-	-	X	-	
General Purpose Interface	MR-J4-A(-RJ)	1 axis	1-Phase 100VAC	0.1, 0.2, 0.4	-	-	X	X	X	-	-	-	X	X	X	X(*3)	X	X	-
			3-Phase 200VAC	0.1, 0.2, 0.4, 0.6, 0.75, 1, 2, 3.5, 5	-	-	X	X	X	-	-	X	X	X	X(*3)	X	X	X	
			3-Phase 400VAC	0.6, 1, 2, 3.5, 5	-	-	X	X	X	-	-	X	X	X	X(*3)	X	-	X	
Multi-Network Interface	MR-J4-TM	1 axis	3-Phase 200VAC	0.1, 0.2, 0.4, 0.6, 0.75, 1, 2, 3.5, 5	-	-	-	-	-	X	X	X	X	X	X	X	X	X	
			1-Phase 100VAC	0.1, 0.2, 0.4	-	-	-	-	-	X	X	X	X	X	X	X	X	-	
			3-Phase 400VAC	0.6, 1, 2, 3.5, 5	-	-	-	-	-	X	X	X	X	X	X	X	X	X	

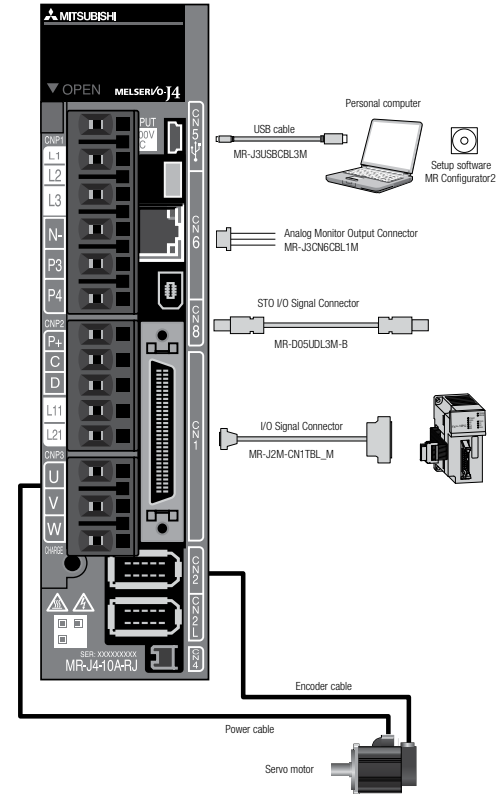
Notes:

- The listed are the rated output of the servo amplifier.
- MR-J4-B/A servo amplifier is compatible with two-wire type serial linear encoder. For four-wire type serial and pulse train interface (A/B/Z-phase differential output type) linear encoders, use MR-J4-B-RJ/A-RJ servo amplifier.
- Positioning function is available only with MR-J4-A-RJ.
- Some functions are available only with the servo amplifier with specific versions.

MR-J4-B-RJ

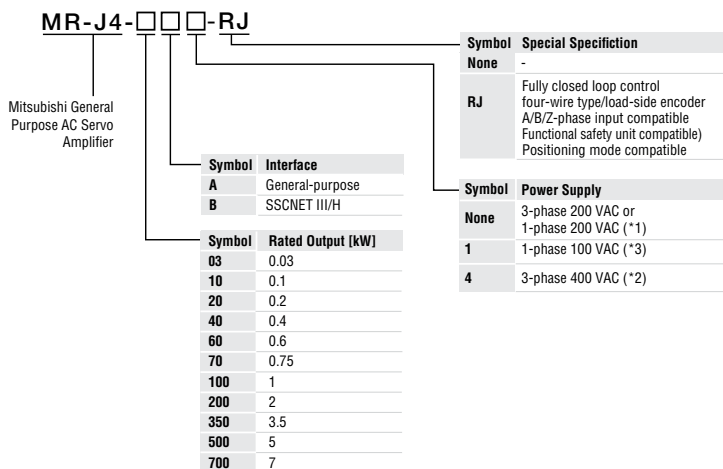


MR-J4-A-RJ



1-Axis Servo Amplifier Selection

(Example Part No. = MR-J4-10B-RJ)

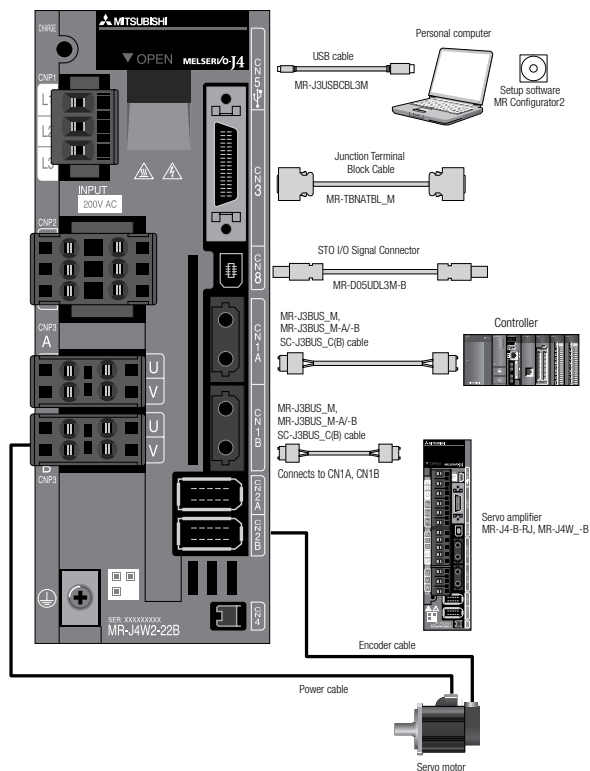


Notes:

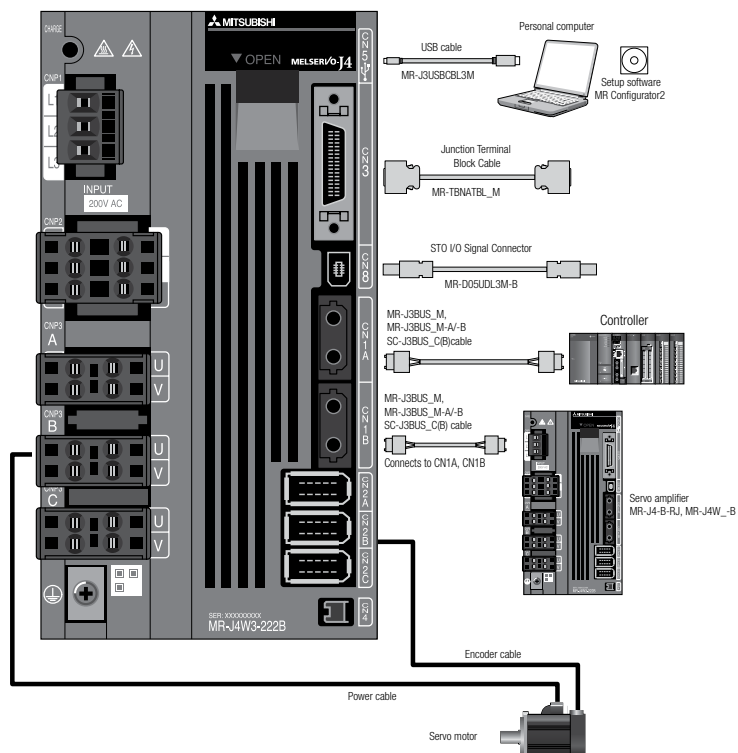
1. Servo amplifiers of 0.75 kW or smaller are available for 1-phase 200 VAC.
2. Servo amplifiers of 0.6 kW, and 1 kW or larger are available for 3-phase 400 VAC.
3. Servo amplifiers of 0.4 kW or smaller are available.

How to Order

MR-J4W2-B



MR-J4W3-B



Multi-Axis Servo Amplifier Selection (Example Part No. = MR-J4W2-22B)

MR-J4W□ - □ B

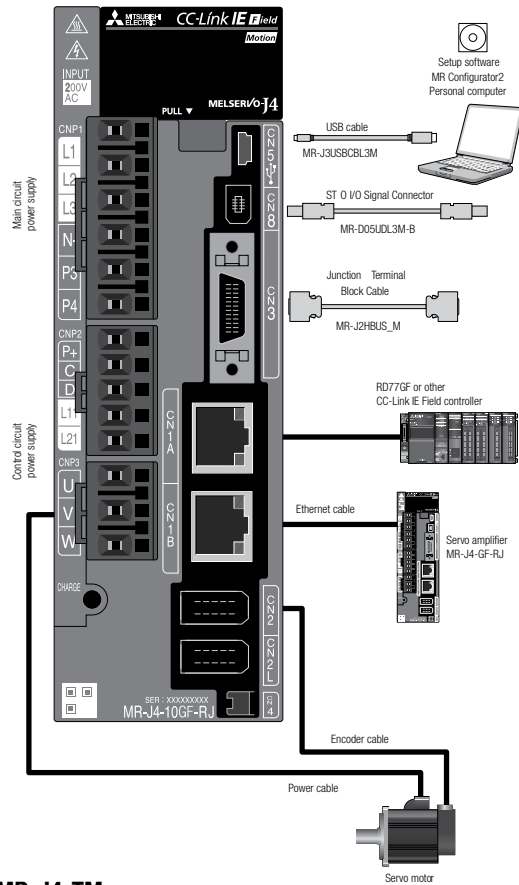
Mitsubishi General
Purpose AC Servo
Amplifier

Symbol	Interface		
B	SSCNET III/H		
Symbol	Rated Output [kW] (*1)		
	A-Axis	B-Axis	C-Axis
0303	0.03	0.03	-
22	0.2	0.2	-
44	0.4	0.4	-
77	0.75	0.75	-
1010	1	1	-
222	0.2	0.2	0.2
444	0.4	0.4	0.4
Symbol	Number of Axes		
W2	2 axes		
W3	3 axes		

Notes:

1. A-axis, B-axis, and C-axis indicate names of axes of the multi-axis servo amplifier. The C-axis is available for the 3-axis servo amplifier.

MR-J4-GF-RJ



1-Axis Servo Amplifier Selection (Example Part No. = MR-J4-60GF)

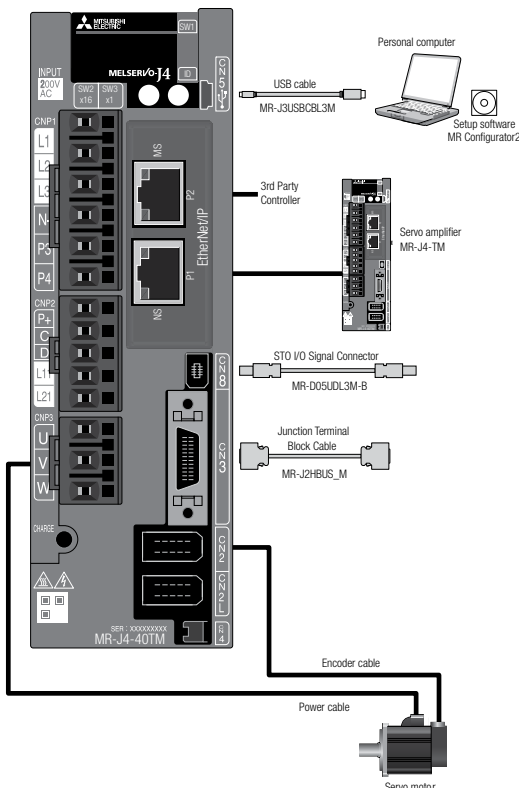
MR-J4-□GF

Mitsubishi General Purpose AC Servo Amplifier

Symbol	Interface
GF	CC-Link IE Field

Symbol	Rated Output [kW]
10	0.1
20	0.2
40	0.4
60	0.6
70	0.75
100	1
200	2
350	3.5
500	5
700	7

MR-J4-TM



1-Axis Servo Amplifier Selection (Example Part No. = MR-J4-10TM)

MR-J4-□TM□

Mitsubishi General Purpose AC Servo Amplifier

Symbol	Power Supply
None	3-phase 200 VAC or 1-phase 200 VAC (*1)
4	3-phase 400 VAC (*2)
1	1-phase 100 VAC (*3)

Symbol	Interface
TM	Multi-Network

Symbol	Rated Output [kW]
10	0.1
20	0.2
40	0.4
60	0.6
70	0.75
100	1
200	2
350	3.5
500	5
700	7

Notes:

1. Servo amplifiers of 0.75 kW or smaller are available for 1-phase 200 VAC.
2. Servo amplifiers of 0.6 kW, and 1 kW or larger are available for 3-phase 400 VAC.
3. Servo amplifiers of 0.4 kW or smaller are available.

How to Specify

MR-J4-GF/MR-J4-GF-RJ (CC-Link IE Field Network Interface) Specifications (200V)

Servo Amplifier Model MR-J4-_-(-RJ)		10GF	20GF	40GF	60GF	70GF	100GF	200GF	350B	500GF	700GF
Stocked Item		S	S	S	S	S	S	S	S	S	S
Output	Rated Voltage	3-phase 170 VAC									
	Rated Current (A)	1.1	1.5	2.8	3.2	5.8	6.0	11.0	17.0	28.0	37.0
Main Circuit Power Supply	Voltage/Frequency AC Input (*1)	3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz					3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz (*36)		3-phase 200 VAC to 240 VAC, 50 Hz/60 Hz		
	Voltage/Frequency DC Input (*1, *38)	283 VDC to 340 VDC									
	Rated Current (A) (*25)	0.9	1.5	2.6	3.2 (*8)	3.8	5.0	10.5	16.0	21.7	28.9
	Permissible Volt. Fluctuation AC Input	3-phase or 1-phase 170 VAC to 264 VAC					3-phase or 1-phase 170 VAC to 264 VAC (*36)		3-phase 170 VAC to 264 VAC		
	Permissible Volt. Fluctuation DC Input (*38)	241 VDC to 374 VDC									
	Permissible Frequency Fluctuation	±5% maximum									
	Control Circuit Power Supply	Voltage/Frequency AC Input	1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz								
Control Circuit Power Supply	Voltage/Frequency DC Input (*38)	283 VDC to 340 VDC									
	Rated Current (A)	0.2					0.3				
	Permissible Volt. Fluctuation AC Input	1-phase 170 VAC to 264 VAC									
	Permissible Volt. Fluctuation DC Input (*38)	241 VDC to 374 VDC									
	Permissible Frequency Fluctuation	±5% maximum									
	Power Consumption (W)	30					45				
	Interface Power Supply	Control Method (*8)	24 VDC ± 10% (required current capacity: 0.3 A (including CN8 connector signals)) Sine-wave PWM control/current control method								
Permissible Regenerative Power	Built-in Regenerative Resistor (*2, *3) (W)	-	10	10	10	20	20	100	100	130	170
Dynamic Brake		Built-in (*4)									
CC-Link IE Field Communication Cycle		0.5 ms, 1.0 ms, 2.0 ms, 4.0 ms									
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible)									
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)									
Analog Monitor		2 channels									
Positioning Mode		Point table method									
Fully Closed Loop Control	MR-J4-GF	Two-wire type communication method									
	MR-J4-GF-RJ	Two-wire/four-wire type communication method									
Load-Side Encoder Interface	MR-J4-GF	Mitsubishi high-speed serial communication									
	MR-J4-GF-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal									
Servo Functions		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, machine diagnosis function, power monitoring function, scale measurement function, super trace control, lost motion compensation									
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), servo motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection									
Safety Function		STO (IEC/EN 61800-5-2)									
Safety Performance	Standards Certified by CB (*34)	EN ISO 13849-1 Category 3 PL e, IEC 61508 SIL 3, EN 62061 SIL CL 3, EN 61800-5-2									
	Response Performance	8 ms or less (STO input OFF – energy shut-off)									
	Test Pulse Input (STO) (*7)	Test pulse interval: 1 Hz to 25 Hz, test pulse off time: 1 ms maximum									
	Mean Time to Dangerous Failure (MTTFd)	MTTFd ≥ 100 years (314a)									
	Diagnostic Coverage (DC)	DC = Medium, 97.6 (%)									
	Probability of Dangerous Failure Per Hour (PFH)	PHF = 6.4 x 10 ⁻⁹ [1/h]									
Compliance to Global Standards		Refer to "Conformity with Global Standards and Regulations" in the MR-J4 Servo Manual									
Structure (IP Rating)		Natural cooling, open (IP20)					Force cooling, open (IP20)			Force cooling, open (IP20) (*5)	
Close Mounting	3-phase Power Input	Possible (*6)					Not possible				
	1-phase Power Input	Possible (*6)					Not possible				

Notes: For MR-J4 Amplifier notes, please go to page 22.

MR-J4-GF/MR-J4-GF-RJ (CC-Link IE Field Network Interface) Specifications (200V) cont.

Servo Amplifier Model MR-J4- (-RJ)		10GF	20GF	40GF	60GF	70GF	100GF	200GF	350B	500GF	700GF
Environment	Ambient Temperature	0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)									
	Ambient Humidity	Operation/storage: 90%RH maximum (non-condensing)									
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust									
	Altitude	2000 m or less above sea level (*37)									
	Vibration Resistance	5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)									
Weight (kg)		1.0	1.0	1.0	1.0	1.4	1.4	2.1	2.3	4.0	6.2

How to Specify

MR-J4-_TM (200V)

Servo Amplifier Model MR-J4-			10TM	20TM	40TM	60TM	70TM	100TM	200TM	350TM	500TM	700TM				
Stocked Item			S	S	S	S	S	S	S	S	S	S				
Output	Rated Voltage		3-phase 170 VAC													
	Rated Current (A)		1.1	1.5	2.8	3.2	5.8	6.0	11.0	17.0	28.0	37.0				
	Output Frequency		Less than 590 Hz													
	Output Frequency Accuracy		±0.01%													
Main Circuit Power Supply Input	Voltage/Frequency	At AC Input	3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz					3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz (*7)		3-phase 200 V AC to 240 VAC, 50 Hz/60 Hz						
		At DC Input (*32)	283 VDC to 340 VDC													
	Rated Current (*25) (A)		0.9	1.5	2.6	3.2 (*31)	3.8	5.0	10.5	16.0	21.7	28.9				
	Permissible Voltage Fluctuation	At AC Input	3-phase or 1-phase 170 VAC to 264 VAC					3-phase or 1-phase 170 VAC to 264 VAC (*32)		3-phase 170 VAC to 264 VAC						
		At DC Input (*32)	241 VDC to 374 VDC													
	Permissible Frequency Fluctuation		Within ±5%													
	Power Supply Capacity (kVA)		Refer to User's Manual													
	Inrush Current (A)		Refer to User's Manual													
	Control Circuit Power Supply Input	Voltage/Frequency	At AC Input	1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz												
			At DC Input (*32)	283 VDC to 340 VDC												
Rated Current (A)		0.2					0.3									
Permissible Voltage Fluctuation		At AC Input	1-phase 170 VAC to 264 VAC													
		At DC Input (*32)	241 VDC to 374 VDC													
Permissible Frequency Fluctuation		Within ±5%														
Power Consumption (W)		30					45									
Inrush Current (A)		Refer to User's Manual														
Interface Power Supply		Voltage		24 VDC ± 10%												
	Current Capacity (A)		0.3 (including CN8 connector signals) (*30)													
Control Method			Sine-wave PWM control, current control method													
Dynamic Brake			Built-in													
Fully Closed Loop Control			Compatible													
Load-Side Encoder Interface			Mitsubishi high-speed serial communication													
Communication Function			USB: connection to a personal computer or others (MR Configurator2-compatible)													
Encoder Output Pulses			Compatible (A/B/Z-phase pulse)													
Analog Monitor			Two channels													
Protective Functions			Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, and linear servo control error protection													
Safety Function			STO (IEC/EN 61800-5-2)													
Safety Performance	Standards Certified by CB (*34)		EN ISO 13849-1 category 3 PL e, IEC 61508 SIL 3, EN 62061 SIL CL3, and EN 61800-5-2 SIL 3													
	Response Performance		8 ms or less (STO input off – energy shut off)													
	Test Pulse Input (STO) (*7)		Test pulse interval: 1 Hz to 25 Hz; Test pulse off time: Up to 1 ms													
	Mean Time to Dangerous Failure (MTTFd)		100 years or longer													
	Diagnostic Coverage (DC)		Medium (90% to 99%)													
	Probability of Dangerous Failure Per Hour (PFH)		6.40 x 10 ⁻⁹ [1/h]													
Compliance to Standards			CE: LVD: EN 61800-5-1, EMC: EN 61800-3, MD: EN ISO 13849-1, EN 61800-5-2, EN 62061; UL 508C													
Structure (IP Rating)			Natural cooling, open (IP20)					Force cooling, open (IP20)				Force cooling, open (IP20) (*5)				
Close Mounting (*6)	3-Phase Power Supply Input		Possible									Not possible				
	1-Phase Power Supply Input		Possible					Not possible				-				
Environment	Ambient Temperature		0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)													
	Ambient Humidity		90%RH maximum (non-condensing), storage: 90%RH maximum (non-condensing)													
	Ambience		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust													
	Altitude		2000 m or less above sea level (*33)													
	Vibration Resistance		5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)													
Weight (kg)			1.0		1.4		1.4		2.1		2.3		4.0		6.2	

Notes: For MR-J4 Amplifier notes, please go to page 22.

MR-J4-B4-RJ (SSCNET III/H Interface) Specifications (400V)

Servo Amplifier Model MR-J4-_(-RJ)		60B4	100B4	200B4	350B4	500B4	700B4
Stocked Item		S	S	S	S	S	S
Output	Rated Voltage	3-phase 323 VAC					
	Rated Current (A)	1.5	2.8	5.4	8.6	14.0	17.0
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase 380 VAC to 480 VAC, 50 Hz/60 Hz					
	Rated Current (A)	1.4	2.5	5.1	7.9	10.8	14.4
	Permissible Voltage Fluctuation	3-phase 232 VAC to 528 VAC					
	Permissible Frequency Fluctuation	±5% maximum					
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 VAC to 480 VAC, 50/60 Hz					
	Rated Current (A)	0.1				0.2	
	Permissible Voltage Fluctuation	1-phase 323 VAC to 528 VAC					
	Permissible Frequency Fluctuation	±5% maximum					
	Power Consumption (W)	30				45	
Interface Power Supply		24 VDC ±10% (required current capacity: 0.3 A (including CN8 connector signals))					
Control Method (*11)		Sine-wave PWM control/current control method					
Tolerable Regenerative Power	Built-in Regenerative Resistor (*2, *3) (W)	15	15	100	100	130 (*11)	170 (*11)
	External Regenerative Resistor (W) (Standard Accessory) (*2, *3, *11, *12)	-	-	-	-	-	-
Dynamic Brake		Built-in (*4)					
SSCNET III/H Command Communication Cycle		0.222 ms, 0.444 ms, 0.888 ms					
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible)					
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)					
Analog Monitor		2 channels					
Fully Closed Loop Control	MR-J4-B4	Two-wire type communication method					
	MR-J4-B4-RJ	Two-wire/four-wire type communication method					
Load-Side Encoder Interface	MR-J4-B4	Mitsubishi high-speed serial communication					
	MR-J4-B4-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal					
Servo Function		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, tightening & press-fit control, machine diagnosis function, power monitoring function, master-slave operation function (*14), scale measurement function (*14), J3 compatibility mode, super trace control (*16), lost motion compensation (*16)					
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection					
Safety Function (*13)		STO (IEC/EN 61800-5-2)					
Safety Performance	Standards Certified by CE	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2					
	Response Performance	8 ms or less (STO input OFF - energy shut-off)					
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum					
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer					
	Diagnostic Coverage (DC)	Medium (90% to 99%)					
	Probability of Dangerous Failure Per Hour (PFH)	1.68 × 10 ⁻¹⁰ [1/h]					
Compliance to Standards		CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C					
Structure (IP Rating)		Natural cooling, open (IP20)		Force cooling, open (IP20)		Force cooling, open (IP20) (*5)	
Close Mounting		Not Possible				Not possible	
Environment	Ambient Temperature	0°C to 55°C (non-freezing), storage: -20°C to 65°C (non-freezing)					
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)					
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Altitude	1000 m or less above sea level					
	Vibration Resistance	5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)					
Weight (kg)		1.7	1.7	2.1	3.6	4.3	6.5

Notes: For MR-J4 Amplifier notes, please go to page 22.

How to Specify

MR-J4-_{TM} (400V)

Servo Amplifier Model MR-J4-		60TM4	100TM4	200TM4	350TM4	500TM4	700TM4
Stocked Item		S	S	S	S	S	S
Output	Rated Voltage	3-phase 323 VAC					
	Rated Current (A)	1.5	2.8	5.4	8.6	14.0	17.0
	Output Frequency	Less than 590 Hz					
	Output Frequency Accuracy	±0.01%					
Main Circuit Power Supply Input	Voltage/Frequency	3-phase 380 V AC to 480 V AC, 50 Hz/60 Hz					
	Rated Current (A)	1.4	2.5	5.1	7.9	10.8	14.4
	Permissible Voltage Fluctuation	3-phase 323 VAC to 528 VAC					
	Permissible Frequency Fluctuation	Within ±5%					
	Power Supply Capacity (kVA)	Refer to User's Manual					
Control Circuit Power Supply Input	Inrush Current (A)	Refer to User's Manual					
	Voltage/Frequency	1-phase 380 VAC to 480 VAC, 50 Hz/60 Hz					
	Rated Current (A)	0.1				0.2	
	Permissible Voltage Fluctuation	1-phase 323 VAC to 528 VAC					
	Permissible Frequency Fluctuation	Within ±5%					
Interface Power Supply	Power Consumption (W)	30				45	
	Inrush Current (A)	Refer to User's Manual					
	Voltage	24 VDC ± 10%					
	Current Capacity (A)	0.3 (including CN8 connector signals) (*30)					
	Control Method	Sine-wave PWM control, current control method					
Dynamic Brake		Built-in					
Fully Closed Loop Control		Compatible					
Load-Side Encoder Interface		Mitsubishi high-speed serial communication					
Communication Function		USB: connection to a personal computer or others (MR Configurator2-compatible)					
Encoder Output Pulses		Compatible (A/B/Z-phase pulse)					
Analog Monitor		Two channels					
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, and linear servo control error protection					
Safety Performance	Safety Function	STO (IEC/EN 61800-5-2)					
	Standards Certified by CB (*34)	EN ISO 13849-1 category 3 PL e, IEC 61508 SIL 3, EN 62061 SIL CL3, and EN 61800-5-2 SIL 3					
	Response Performance	8 ms or less (STO input off — energy shut off)					
	Test Pulse Input (STO)	Test pulse interval: 1 Hz to 25 Hz; Test pulse off time: Up to 1 ms					
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer					
	Diagnostic Coverage (DC)	Medium (90% to 99%)					
Probability of Dangerous Failure Per Hour (PFH)		6.40 x 10 ⁻⁹ [1/h]					
Compliance to Standards		CE: LVD: EN 61800-5-1, EMC: EN 61800-3, MD: EN ISO 13849-1, EN 61800-5-2, EN 62061; UL 508C					
Structure (IP Rating)		Natural cooling, open (IP20)		Force cooling, open (IP20)		Force cooling, open (IP20) (*5)	
Close Mounting		Not Possible					
Environment	Ambient Temperature	0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)					
	Ambient Humidity	90%RH maximum (non-condensing), storage: 90%RH maximum (non-condensing)					
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Altitude	2000 m or less above sea level (*33)					
Vibration Resistance		5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)					
Weight (kg)		1.7		2.1		3.6	
						4.3	
						6.5	

Notes: For MR-J4 Amplifier notes, please go to page 22.

MR-J4W2-B (2-Axis, SSCNET III/H Interface) Specifications (200V)

Servo Amplifier Model MR-J4W2-			22B	44B	77B	1010B
Stocked Item			S	S	S	S
Output	Rated Voltage		3-phase 170 VAC			
	Rated Current (Each Axis) (A)		1.5	2.8	5.8	6.0
Main Circuit Power Supply	Voltage/Frequency (*1)		3-phase or 1-phase 200 VAC to 240 VAC, 50/60 Hz			3-phase 200 VAC to 240 VAC, 50/60 Hz
	Rated Current (A) (*25)		2.9	5.2	7.5	9.8
	Permissible Voltage Fluctuation		3-phase or 1-phase 170 VAC to 264 VAC			3-phase 170 VAC to 264 VAC
	Permissible Frequency Fluctuation		±5% maximum			
Control Circuit Power Supply	Voltage/Frequency		1-phase 200 VAC to 240 VAC, 50/60 Hz			
	Rated Current (A)		0.4			
	Permissible Voltage Fluctuation		1-phase 170 VAC to 264 VAC			
	Permissible Frequency Fluctuation		±5% maximum			
Power Consumption (W)			55			
Interface Power Supply			24 VDC ±10% (required current capacity: 0.35 A (including CN8 connector signals))			
Control Method			Sine-wave PWM control/current control method			
Capacitor Regeneration	Reusable Regeneration Energy (J) (W) (*19)		17	21	44	
	Moment of Inertia (J) Equivalent to Permissible Charging Amount (× 10 ⁻⁴ kg•m ²) (*20)		3.45	4.26	8.92	
	Mass Equivalent to Permissible Charging Amount (kg) (*21)	LM-H3	3.8	4.7	9.8	
		LM-K2 LM-U2	8.5	10.5	22.0	
Tolerable Regenerative Power of the Built-in Regenerative Resistor (*2, *3) (W)			20		100	
Dynamic Brake			Built-in (*4)			
SSCNET III/H Command Communication Cycle			0.222 ms, 0.444 ms, 0.888 ms			
Communication Function			USB: Connect a personal computer (MR Configurator2 compatible)			
Encoder Output Pulse			Compatible (A/B-phase pulse)			
Analog Monitor			None			
Fully Closed Loop Control (*24)			Available (*9)			
Load-Side Encoder Interface (*22)			Mitsubishi high-speed serial communication			
Protective Functions			Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection			
Servo Function			Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, tightening & press-fit control, machine diagnosis function, power monitoring function, scale measurement function (*14), J3 compatibility mode			
Safety Function			STO (IEC/EN 61800-5-2) (*23)			
Safety Performance	Standards Certified by CB		EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2			
	Response Performance		8 ms or less (STO input OFF — energy shut-off)			
	Test Pulse Input (STO) (*7)		Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum			
	Mean Time to Dangerous Failure (MTTFd)		100 years or longer			
	Average Diagnostic Coverage (DCavg)		Medium (90% to 99%)			
	Probability of Dangerous Failure Per Hour (PFH)		1.68 × 10 ⁻¹⁰ [1/h]			
Compliance to Standards			CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C			
Structure (IP Rating)			Natural cooling, open (IP20)		Force cooling, open (IP20)	
Close Mounting			Possible			
Environment	Ambient Temperature		0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)			
	Ambient Humidity		90%RH maximum (non-condensing), storage: 90%RH maximum (non-condensing)			
	Ambience		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Altitude		1000 m or less above sea level			
Vibration Resistance			5.9 m/s ² at 10 Hz to 55 Hz (directions of X, Y and Z axes)			
Weight (kg)			1.5	1.5	2.0	2.0

Notes: For MR-J4 Amplifier notes, please go to page 22.

How to Specify

MR-J4W3-B (3-Axis, SSCNET III/H Interface) Specifications (200V)

Servo Amplifier Model MR-J4W3-		222B	444B
Stocked Item		S	S
Output	Rated Voltage	3-phase 170 VAC	
	Rated Current (A)	1.5	2.8
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase or 1-phase 200 VAC to 240 VAC, 50/60 Hz	
	Rated Current (A) (*25)	4.3	7.8
	Permissible Voltage Fluctuation	3-phase or 1-phase 170 VAC to 264 VAC	
	Permissible Frequency Fluctuation	±5% maximum	
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 VAC to 240 VAC, 50/60 Hz	
	Rated Current (A)	0.4	
	Permissible Voltage Fluctuation	1-phase 170 VAC to 264 VAC	
	Permissible Frequency Fluctuation	±5% maximum	
Power Consumption (W)		55	
Interface Power Supply		24 VDC ±10% (required current capacity: 0.45 A (including CN8 connector signals))	
Capacitor Regeneration	Reusable Regenerative Energy (J) (*19)	21	30
	Moment of inertia (J) Equivalent to Permissible Charging Amount (× 10 ⁻⁴ kg•m ²) (*20)	4.26	6.08
	Mass Equivalent to Permissible Charging Amount (kg) (*21)	4.7	6.7
	LM-H3 LM-K2 LM-U2	10.5	15.0
Tolerable Regenerative Power of the Built-in Regenerative Resistor (*2, *3) (W)		30	
Control Method		Sine-wave PWM control/current control method	
Dynamic Brake		Built-in (*4)	
SSCNET III/H Command Communication Cycle		0.222 ms (*26) , 0.444 ms, 0.888 ms	
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible)	
Encoder Output Pulse		Not compatible	
Analog Monitor		None	
Fully Closed Loop Control		Not compatible	
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection	
Servo Function		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, tightening & press-fit control, machine diagnosis function, power monitoring function, J3 compatibility mode	
Safety Function		STO (IEC/EN 61800-5-2) (*23)	
Safety Performance	Standards Certified by CB	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2	
	Response Performance	8 ms or less (STO input OFF — energy shut-off)	
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum	
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer	
	Diagnostic Coverage (DCavg)	Medium (90% to 99%)	
	Probability of Dangerous Failure Per Hour (PFH)	1.68 × 10 ⁻¹⁰ [1/h]	
Compliance to Standards		LVD: EN 61800-5-1; EMC: EN 61800-3; MD: EN ISO 13849-1, EN 61800-5-2, EN 62061	
Structure (IP Rating)		Forced cooling, open (IP20)	
Close Mounting		Possible	
Environment	Ambient Temperature	0°C to 55°C (non-freezing), storage: -20°C to 65°C (non-freezing)	
	Ambient Humidity	90%RH maximum (non-condensing), storage: 90%RH maximum (non-condensing)	
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust	
	Altitude	1000 m or less above sea level	
Vibration Resistance		5.9 m/s ² at 10 Hz to 55 Hz (directions of X, Y and Z axes)	
Weight (kg)		1.9	1.9

Notes: For MR-J4 Amplifier notes, please go to page 22.

MR-J4-A(1)/MR-J4-A(1)-RJ (General Purpose Interface) Specifications (200V/100V)

Servo Amplifier Model MR-J4_-RJ		10A	20A	40A	60A	70A	100A	200A	350A	500A	700A
Stocked Item		S	S	S	S	S	S	S	S	S	S
Output	Rated Voltage	3-phase 170 VAC									
	Rated Current (A)	1.1	1.5	2.8	3.2	5.8	6.0	11.0	17.0	28.0	37.0
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase or 1-phase 200VAC to 240VAC, 50/60 Hz					3-phase 200 VAC to 240 VAC, 50/60 Hz				
	Rated Current (A) (*14)	0.9	1.5	2.6	3.2 (*8)	3.8	5.0	10.5	16.0	21.7	28.9
	Permissible Voltage Fluctuation	3-phase or 1-phase 170 VAC to 264 VAC					3-phase 170 VAC to 264 VAC				
	Permissible Frequency Fluctuation	±5% maximum									
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 VAC to 240 VAC, 50/60 Hz									
	Rated Current (A)	0.2									0.3
	Permissible Voltage Fluctuation	1-phase 170 VAC to 264 VAC									
	Permissible Frequency Fluctuation	±5% maximum									
	Power Consumption (W)	30									45
Interface Power Supply		24 VDC ±10% (required current capacity: 0.5 A (including CN8 connector signal))									
Control Method		Sine-wave PWM control/current control method									
Tolerable Regenerative Power	Built-in Regenerative Resistor (*2, *3) (W)	-	10	10	10	20	20	100	100	130	170
	External Regenerative Resistor (Standard Accessory) (*2, 3, 11, 12)	-	-	-	-	-	-	-	-	-	-
	Dynamic Brake	Built-in (*4)									
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible); RS-422: 1 : n communication (up to 32 axes) (*28)									
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)									
Analog Monitor		2 channels									
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection									
Position Control Mode	Maximum Input Pulse Frequency	4 Mpps (when using differential receiver), 200 kpps (when using open-collector)									
	Positioning Feedback Pulse	Encoder resolution: 22 bits									
	Command Pulse Multiplying Factor	Electronic gear A/B multiple, A: 1 to 16777215, B: 1 to 16777215, 1/10 < A/B < 4000									
	Positioning Complete Width Setting	0 pulse to ±65535 pulses (command pulse unit)									
	Error Excessive	±3 rotations									
	Torque Limit	Set by parameters or external analog input (0 VDC to +10 VDC/maximum torque)									
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000									
	Analog Speed Command Input	0 VDC to ±10 VDC/rated speed (Speed at 10 V is changeable with [Pr. PC12])									
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0% to 100%), 0% (power fluctuation: ±10%) ±0.2% maximum (ambient temperature: 25°C ± 10°C) only when using analog speed command									
	Torque Limit	Set by parameters or external analog input (0 VDC to +10 VDC/maximum torque)									
Torque Control Mode	Analog Torque Command Input	0 VDC to ±8 VDC/maximum torque (input impedance: 10 kΩ to 12 kΩ)									
	Speed Limit	Set by parameters or external analog input (0 VDC to ± 10 VDC/rated speed)									
Fully Closed Loop Control	MR-J4-A(1)	Two-wire type communication method (*9)									
	MR-J4-A(1)-RJ	Two-wire/four-wire type communication method									
Load-Side Encoder Interface	MR-J4-A(1)	Mitsubishi high-speed serial communication									
	MR-J4-A(1)-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal									
	Servo Function	Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, machine diagnosis function, power monitoring function, super trace control (Note 15), lost motion compensation (*15)									
Functional Safety		STO (IEC/EN 61800-5-2)									
Safety Performance	Standards Certified by CB	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2									
	Response Performance	8 ms or less (STO input OFF — energy shut-off)									
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum									
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer									
	Diagnostic Coverage (DCavg)	Medium (90% to 99%)									
	Probability of Dangerous Failure Per Hour (PFH)	1.68 × 10 ⁻¹⁰ [1/h]									
Compliance to Standards		CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C									
Structure (IP Rating)		Natural cooling, open (IP20)					Force cooling, open (IP20)			Force cooling, open (IP20) (*5)	
Close Mounting		Possible (*6)									Not possible
Environment	Ambient Temperature	0°C to 55°C (non-freezing), storage: -20°C to 65°C (non-freezing)									
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)									
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust									
	Altitude	1000 m or less above sea level									
	Vibration Resistance	5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)									
Weight (kg)		0.8	0.8	1.0	1.0	1.4	1.4	2.1	2.3	4.0	6.2

Notes: For MR-J4 Amplifier notes, please go to page 22.

How to Specify

MR-J4-A4/MR-J4-A4-RJ (General Purpose Interface) Specifications (400v)

Servo Amplifier Model MR-J4-_-(-RJ)		60A4	100A4	200A4	350A4	500A4	700A4
Stocked Item		S	S	S	S	S	S
Output	Rated Voltage	3-phase 323 VAC					
	Rated Current (A)	1.5	2.8	5.4	8.6	14.0	17.0
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase 380VAC to 480VAC, 50/60 Hz					
	Rated Current (A)	1.4	2.5	5.1	7.9	10.8	14.4
	Permissible Voltage Fluctuation	3-phase 323 VAC to 528 VAC					
	Permissible Frequency Fluctuation	±5% maximum					
Control Circuit Power Supply	Voltage/Frequency	1-phase 380 VAC to 480 VAC, 50/60 Hz					
	Rated Current (A)	0.1				0.2	
	Permissible Voltage Fluctuation	1-phase 323 VAC to 528 VAC					
	Permissible Frequency Fluctuation	±5% maximum					
	Power Consumption (W)	30				45	
Interface Power Supply		24 VDC ±10% (required current capacity: 0.5 A (including CN8 connector signal))					
Control Method		Sine-wave PWM control/current control method					
Dynamic Brake		Built-in (*4)					
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible); RS-422: 1 : n communication (up to 32 axes)					
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)					
Analog Monitor		2 channels					
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection					
Position Control Mode	Maximum Input Pulse Frequency	4 Mpps (when using differential receiver), 200 kpps (when using open-collector)					
	Positioning Feedback Pulse	Encoder resolution: 22 bits					
	Command Pulse Multiplying Factor	Electronic gear A/B multiple, A: 1 to 16777215, B: 1 to 16777215, 1/10 < A/B < 4000					
	Positioning Complete Width Setting	0 pulse to ±65535 pulses (command pulse unit)					
	Error Excessive	±3 rotations					
Speed Control Mode	Torque Limit	Set by parameters or external analog input (0 VDC to +10 VDC/maximum torque)					
	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000					
	Analog Speed Command Input	0 VDC to ±10 VDC/rated speed (Speed at 10 V is changeable with [Pr. PC12])					
	Speed Fluctuation Rate	±0.01% maximum (load fluctuation 0% to 100%), 0% (power fluctuation: ±10%) ±0.2% maximum (ambient temperature: 25°C ± 10°C) only when using analog speed command					
	Torque Limit	Set by parameters or external analog input (0 VDC to +10 VDC/maximum torque)					
Torque Control Mode	Analog Torque Command Input	0 VDC to ±8 VDC/maximum torque (input impedance: 10 kΩ to 12 kΩ)					
	Speed Limit	Set by parameters or external analog input (0 VDC to ± 10 VDC/rated speed)					
Fully Closed Loop Control	MR-J4-A4	Two-wire type communication method					
	MR-J4-A4-RJ	Two-wire/four-wire type communication method					
Load-Side Encoder Interface	MR-J4-A4	Mitsubishi high-speed serial communication					
	MR-J4-A4-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal					
Servo Function		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, machine diagnosis function, power monitoring function, super trace control (*16), lost motion compensation (*16)					
Safety Function		STO (IEC/EN 61800-5-2)					
Safety Performance	Standards Certified by CB	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2					
	Response Performance	8 ms or less (STO input OFF — energy shut-off)					
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum					
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer					
	Diagnostic Coverage (DCavg)	Medium (90% to 99%)					
	Probability of Dangerous Failure Per Hour (PFH)	1.68 × 10 ⁻¹⁰ [1/h]					
Compliance to Standards		CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C					
Structure (IP Rating)		Natural cooling, open (IP20)		Force cooling, open (IP20)		Force cooling, open (IP20) (*5)	
Close Mounting		Not Possible					
Environment	Ambient Temperature	0°C to 55°C (non-freezing), storage: -20°C to 65°C (non-freezing)					
	Ambient Humidity	90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)					
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
	Altitude	1000 m or less above sea level					
	Vibration Resistance	5.9 m/s² at 10 Hz to 55 Hz (directions of X, Y and Z axes)					
Weight (kg)		1.7	1.7	2.1	3.6	4.3	6.5

Notes: For MR-J4 Amplifier notes, please go to page 22.

Amplifier Notes

1. Rated output and speed of a rotary Servo Motor and a direct drive motor; and continuous thrust and maximum speed of a linear Servo Motor are applicable when the servo amplifier, combined with the Servo Motor, is operated within the specified power supply voltage and frequency.
2. Select the most suitable regenerative option for your system with our capacity selection software.
3. Refer to "Regenerative Option" in this guide for the tolerable regenerative power [W] when regenerative option is used.
4. When using the built-in dynamic brake, refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual", MR-J4-_GF_(RJ) Servo Amplifier Instruction Manual (Motion Mode) or MR-J4W2-_B MR-J4W3-_B MR-J4W2-0303B6 Servo Amplifier Instruction Manual for the permissible load to motor inertia ratio and the permissible load to mass ratio and details.
5. Terminal blocks are excluded.
6. When the servo amplifiers are closely mounted, keep the ambient temperature within 0 °C to 45 °C, or use them with 75% or less of the effective load ratio.
7. The test pulse is a signal for the external circuit to perform self-diagnosis by turning off the signals to the servo amplifier instantaneously at regular intervals.
8. The rated current is 2.9 A when the servo amplifier is used with UL or CSA compliant servo motor.
9. Fully closed loop control is compatible with the servo amplifiers with software version A3 or later.
10. The command communication cycle depends on the controller specifications and the number of axes connected.
11. The value in brackets is applicable when cooling fans (2 units of 92 mm x 92 mm, minimum air flow: 1.0 m³/min) are installed, and then [Pr. PA02] is changed.
12. Servo amplifiers without an enclosed regenerative resistor are also available. Refer to "1-Axis Servo Model Designation" in this catalog for details.
13. Use an optional external dynamic brake with the servo amplifier. Without the external dynamic brake, a Servo Motor does not stop immediately at emergency stop and falls in free-run status, causing an accident such as machine collision, etc. Take measures to ensure safety on the entire system when not using the dynamic brake.
14. This function is available with the servo amplifiers with software version A8 or later.
15. This value is applicable for 750 W or smaller servo amplifiers in 200 V class when a 3-phase power supply is used.
16. This function is available with the servo amplifiers with software version B4 or later.
17. One unit of converter.
18. The servo amplifier built-in regenerative resistor is compatible with the maximum torque deceleration when the Servo Motor is used within the rated speed and the recommended load to motor inertia ratio. Contact your local sales office if the operating motor speed or the load to motor inertia ratio exceed the rated speed or the recommended ratio.
19. Reusable regenerative energy is equivalent to the energy generated under the following conditions. For rotary Servo Motor: the energy that is generated when the machine, whose moment of inertia is equivalent to the permissible charging amount, decelerates from the rated speed to a stop. For linear Servo Motor: the energy that is generated when the machine, whose mass is equivalent to the permissible charging amount, decelerates from the maximum speed to a stop. For direct drive motor: the energy that is generated when the machine, whose moment of inertia is equivalent to the permissible charging amount, decelerates from the rated speed to a stop.
20. This value is the moment of inertia when the rotary Servo Motor decelerates from the rated speed to a stop. When two axes are simultaneously decelerated, the permissible charging amount is equivalent to the total moments of inertia of the two axes. Otherwise, the permissible charging amount is equivalent to the moment of inertia of each axis. The value also applies to the direct drive motor.
21. This value is the mass when the linear Servo Motor decelerates from maximum speed to a stop. Mass of primary side (coil) is included. When two axes are simultaneously decelerated, the permissible charging amount is equivalent to the total masses of the two axes. Otherwise, the permissible charging amount is equivalent to the mass of each axis.
22. Not compatible with pulse train interface (A/B/Z-phase differential output type).
23. STO is common for all axes.
24. The load-side encoder and the Servo Motor encoder are compatible only with two-wire type communication method.
25. This value is applicable when a 3-phase power supply is used.
26. Servo amplifier with software version A3 or later is compatible with the command communication cycle of 0.222 ms. However, note that the following functions are not available when 0.222 ms is used: auto tuning (real time, one-touch, and vibration suppression control), adaptive filter II, vibration tough drive, and power monitoring.
27. The value is applicable for the MR-J4-_B-RJ010 servo amplifier only.
28. RS-422 communication is compatible with the servo amplifiers with software version A3 or later.
29. One unit of converter unit is required for each drive unit. Refer to the Users's Manual for the specifications of the converter unit.
30. 0.3 A is the value applicable when all I/O signals are used. The current capacity can be decreased by reducing the number of I/O points.
31. When using 1-phase 200 V AC to 240 V AC power supply, operate the servo amplifier at 75% or smaller effective load ratio.
32. For the connection example of the power circuit when a DC input is used, refer to the User's Manual.
33. Follow the restrictions in the User's Manual when using the servo amplifiers at altitude exceeding 1000 m and up to 2000 m over sea level.
34. The safety level depends on the setting value of [Pr. PF18 STO diagnosis error detection time] and whether STO input diagnosis by TOFB output is performed or not. For details, refer to the Function column of [Pr. PF18] in the User's Manual.
35. The external dynamic brake cannot be used for compliance with SEMI-F47 standard. Do not assign DB (Dynamic brake interlock) in [Pr. PD07] to [Pr. PD09]. Failure to do so will cause the servo amplifier to become servo-off when an instantaneous power failure occurs.
36. Use the servo amplifier with 75% or less of the effective load ratio when a 1-phase 200 VAC to 240 VAC power supply is used.
37. Refer to relevant Servo Amplifier Instruction Manual for the restrictions when using the servo amplifiers at altitude exceeding 1000 m and up to 2000 m above sea level.
38. MR-J4-_GF-RJ servo amplifiers are available for DC power input. For connection example of power circuit with DC input, refer to relevant Servo Amplifier Instruction Manual.
39. The dynamic brake is electronic. The electronic dynamic brake does not operate when the control circuit power is off. It may not operate depending on alarms and warnings. Refer to "MR-J4W2-_B MR-J4W3-_B MR-J4W2-0303B6 Servo Amplifier Instruction Manual" for details.

How to Specify

HG-KR Series 3000 R/min (Low Inertia, Small Capacity) Specifications 200v

Servo Motor Model HG-KR_		053(B)	13(B)	23(B)	43(B)	73(B)
Servo Amplifier Model	MR-J4_-	Refer to "Combinations of Servo Motor and Servo Amplifier" in this selection guide				
	MR-J4W_-					
Power Supply Capacity (kVA) (*1)		0.3	0.3	0.5	0.9	1.3
Continuous Running Duty	Rated Output (W)	50	100	200	400	750
	Rated Torque (N•m) (Note 3)	0.16	0.32	0.64	1.3	2.4
Maximum Torque (N•m)		0.56	1.1	2.2	4.5	8.4
Rated Speed (r/min)		3000				
Maximum Speed (r/min)		6000				
Permissible Instantaneous Speed (r/min)		6900				
Power Rate Continuous Rated Torque	Standard (kW/s)	5.63	13.0	18.3	43.7	45.2
	With Electromagnetic Brake (kW/s)	5.37	12.1	16.7	41.3	41.6
Rated Current (A)		0.9	0.8	1.3	2.6	4.8
Maximum Current (A)		3.2	2.5	4.6	9.1	17
Regenerative Braking Frequency (*2)	MR-J4- (times/min)	(*4)	(*4)	453	268	157
	MR-J4W_- (times/min)	2500	1350	451	268	393
Moment of inertia J (x10 ⁻⁴ kg•m ²)	Standard	0.0450	0.0777	0.221	0.371	1.26
	With Electromagnetic Brake	0.0472	0.0837	0.243	0.393	1.37
Recommended Load/Motor Inertia Ratio (Note 1)		17 times or less		26 times or less	25 times or less	17 times or less
Speed/Position Detector		Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)				
Oil Seal		None (Servo Motors with oil seal are available. (HG-KR_J))				
Insulation Class		130 (B)				
Structure		Totally enclosed, natural cooling (IP rating: IP65) (Note 2)				
Environment (*3)	Ambient Temperature	0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)				
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation / Vibration (*4)	1000 m or less above sea level; X: 49 m/s ² Y: 49 m/s ²				
Vibration Rank		V10 (*6)				
Permissible Load for the Shaft (*5)	L (mm)	25	25	30	30	40
	Radial (N)	88	88	245	245	392
	Thrust (N)	59	59	98	98	147
Weight (kg)	Standard	0.34	0.54	0.91	1.4	2.8
	With Electromagnetic Brake	0.54	0.74	1.3	1.8	3.8

Notes: For MR-J4 Servo Motor notes, please go to page 26

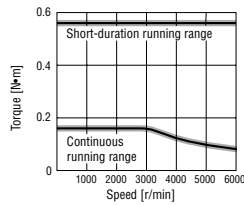
HG-KR 3000 Series Electromagnetic Brake Specifications (*1)

Servo Motor Model HG-KR_		053B	13B	23B	43B	73B
Type		Spring actuated type safety brake				
Rated Voltage		24 VDC ^{+0.1} %				
Power Consumption (W) at 20 °C		6.3	6.3	7.9	7.9	10
Electromagnetic Brake Static Friction Torque (N•m)		0.32	0.32	1.3	1.3	2.4
Permissible Braking Work	Per Braking (J)	5.6	5.6	22	22	64
	Per Hour (J)	56	56	220	220	640
Electromagnetic Brake Life (*2)	Number of Times (Times)	20000				
	Work Per Braking (J)	5.6	5.6	22	22	64

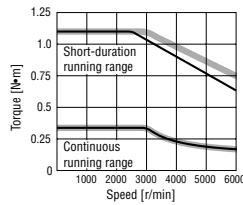
Notes:

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

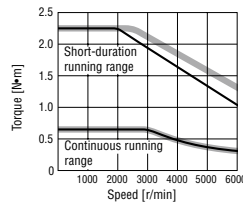
HG-KR053(B) (*1, *2)



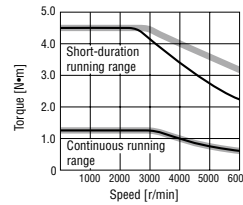
HG-KR13(B) (*1, *2)



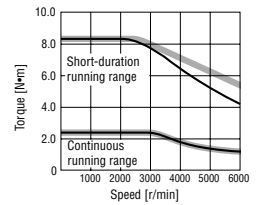
HG-KR23(B) (*1, *2)



HG-KR43(B) (*1, *2)



HG-KR73(B) (*1, *2)



- Notes: 1. — : For 3-phase 200 VAC or 1-phase 230 VAC.
2. — : For 1-phase 200 VAC.
3. Torque drops when the power supply voltage is below the specified value.

HG-JR 3000 R/min Series (Low Inertia, Medium Capacity) Specifications 200v

Servo Motor Model HG-JR_		53(B)	73(B)	103(B)	153(B)	203(B)	353(B)	503(B)
Servo Amplifier Model	MR-J4-	Refer to "Combinations of Servo Motor and Servo Amplifier" in this guide.						
	MR-J4W _							
Power Supply Capacity (kVA) (*1)		1.0	1.3	1.7	2.5	3.5	5.5	7.5
Continuous Running Duty	Rated Output (kW)	0.5	0.75	1.0	1.5	2.0	3.3 <3.5> (Note 5)	5.0
	Rated Torque (N·m) (Note 3)	1.6	2.4	3.2	4.8	6.4	10.5 <11.1> (Note 5)	15.9
Maximum Torque (N·m) (Note 6)		4.8 <6.4>	7.2 <9.6>	9.6 <12.7>	14.3 <19.1>	19.1 <25.5>	32.0 <44.6>	44.7 <63.7>
Rated Speed (r/min)		3000						
Maximum Speed (r/min)		6000						
Permissible Instantaneous Speed (r/min)		6900						
Power Rate Continuous Rated Torque (kW/s)	Standard (kW/s)	16.7	27.3	38.2	60.2	82.4	83.5	133
	With Electromagnetic Brake (kW/s)	12.5	22.0	32.2	53.1	74.8	71.6	119
Rated Current (A)		3.0	5.6	5.6	11	11	17 <18> (Note 5)	27
Maximum Current (A) (Note 5)		9.0 <12>	17 <23>	17 <23>	32 <43>	32 <43>	51 <71>	81 <108>
Regenerative Braking Frequency (*2, Note 5)	MR-J4- (times/min)	67 <137>	98 <511>	76 <396>	271 <271>	206 <206>	73 <98>	68 <89>
	MR-J4W _ (times/min)	328 <328>	237	186	-	-	-	-
Moment of Inertia J (x10 ⁻⁴ kg·m ²)	Standard	1.52	2.09	2.65	3.79	4.92	13.2	19.0
	With Electromagnetic Brake	2.02	2.59	3.15	4.29	5.42	15.4	21.2
Recommended Load/Motor Inertia Ratio (Note 1)		10 times or less						
Speed/Position Detector		Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)						
Oil Seal		Attached						
Insulation Class		155 (F)						
Structure		Totally enclosed, natural cooling (IP rating: IP67) (Note 2)						
Environment (*3)	Ambient Temperature	0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 m or less above sea level						
Vibration (*4)		X: 24.5 m/s ² Y: 24.5 m/s ²						
Vibration Rank		V10 (*6)						
Permissible Load for the Shaft (*5)	L (mm)	40	40	40	40	40	55	55
	Radial (N)	323	323	323	323	323	980	980
	Thrust (N)	284	284	284	284	284	490	490
Weight (kg)	Standard	3.0	3.7	4.5	5.9	7.5	13	18
	With Electromagnetic Brake	4.4	5.1	5.9	7.3	8.9	15	20

Notes: For MR-J4 Servo Motor notes, please go to page 26

How to Specify

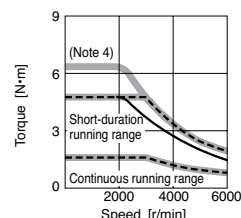
HG-JR 3000 Series (200V) Electromagnetic Brake Specifications (*1)

Servo Motor Model HG-JR_	53B	73B	103B	153B	203B	353B	503B
Type	Spring actuated type safety brake						
Rated Voltage	24 VDC ^{+0.1} %						
Power Consumption (W) at 20°C	11.7	11.7	11.7	11.7	11.7	23	23
Electromagnetic Brake Static Friction Torque (N•m)	6.6	6.6	6.6	6.6	6.6	16	16
Permissible Braking Work	Per Braking (J)	64	64	64	64	400	400
	Per Hour (J)	640	640	640	640	4000	4000
Electromagnetic Brake Life (*2)	Number of Times (Times)	5000					
	Work Per Braking (J)	64	64	64	64	400	400

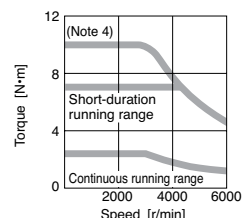
Notes:

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

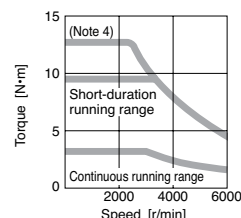
HG-JR53(B) (Note 1, 2, 3)



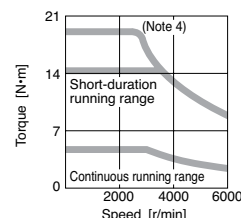
HG-JR73(B) (Note 1)



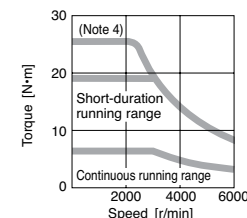
HG-JR103(B) (Note 1)



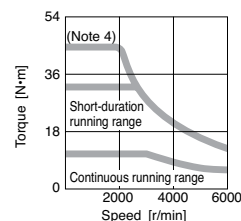
HG-JR153(B) (Note 1)



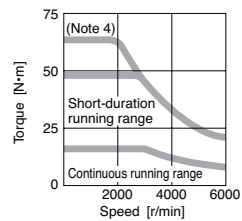
HG-JR203(B) (Note 1)



HG-JR353(B) (Note 1)



HG-JR503(B) (Note 1)



- Notes: 1. — : For 3-phase 200 V AC.
2. --- : For 1-phase 230 V AC.
3. - - - : For 1-phase 200 V AC.

This line is drawn only where it differs from the other two lines.

4. This value is applicable when the torque is maximally increased. Refer to MR-J4 Brochure for more specifications.
5. Torque drops when the power supply voltage is below the specified value.

HG-JR 3000 R/min Series (Low Inertia, Medium Capacity) Specifications 400V

Servo Motor Model HG-JR_		534(B)	734(B)	1034(B)	1534(B)	2034(B)	3534(B)	5034(B)
Servo Amplifier Model	MR-J4-	Refer to "Combinations of Servo Motor and Servo Amplifier" in this guide						
Power Supply Capacity (kVA) (*1)		1.0	1.3	1.7	2.5	3.5	5.5	7.5
Continuous Running Duty	Rated Output (kW)	0.5	0.75	1.0	1.5	2.0	3.3 <3.5> (Note 5)	5.0
	Rated Torque (N•m) (Note 3)	1.6	2.4	3.2	4.8	6.4	10.5 <11.1> (Note 5)	15.9
Maximum Torque (N•m) (Note 6)		4.8 <6.4>	7.2 <9.6>	9.6 <12.7>	14.3 <19.1>	19.1 <25.5>	32.0 <44.6>	47.2 <63.7>
Rated Speed (r/min)		3000						
Maximum Speed (r/min)		6000						
Permissible Instantaneous Speed (r/min)		6900						
Power Rate Continuous Rated Torque (kW/s)	Standard (kW/s)	16.7	27.3	38.2	60.2	82.4	83.5	133
	With Electromagnetic Brake (kW/s)	12.5	22.0	32.2	53.1	74.8	71.6	119
Rated Current (A)		1.5	2.8	2.8	5.4	5.4	8.3 <8.8> (Note 5)	14
Maximum Current (A) (Note 6)		4.5 <6.0>	8.4 <12>	8.4 <12>	17 <22>	17 <22>	26 <36>	41 <54>

Notes: For MR-J4 Servo Motor notes, please go to page 26

HG-JR 3000 R/min Series (Low Inertia, Medium Capacity) Specifications 400V

Servo Motor Model HG-JR_		534(B)	734(B)	1034(B)	1534(B)	2034(B)	3534(B)	5034(B)
Regenerative Braking Frequency (*2) (Note 6)	MR-J4- (times/min)	99 <100>	72 <489>	56 <382>	265 <275>	203 <209>	75 <98>	68 <89>
	Standard	1.52	2.09	2.65	3.79	4.92	13.2	19.0
Moment of Inertia J (x10 ⁻⁴ kg•m ²)	With Electromagnetic Brake	2.02	2.59	3.15	4.29	5.42	15.4	21.2
Recommended Load/Motor Inertia Ratio (Note 1)		10 times or less						
Speed/Position Detector		Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)						
Oil Seal		Attached						
Insulation Class		155 (F)						
Structure		Totally enclosed, natural cooling (IP rating: IP67) (Note 2)						
Environment (*3)	Ambient Temperature	0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)						
	Ambient Humidity	80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)						
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
	Elevation	1000 m or less above sea level						
Vibration Rank		V10 (*6)						
Permissible Load for the Shaft (*5)	L (mm)	40	40	40	40	40	55	55
	Radial (N)	323	323	323	323	323	980	980
	Thrust (N)	284	284	284	284	284	490	490
Weight (kg)	Standard	3.0	3.7	4.5	5.9	7.5	13	18
	With Electromagnetic Brake	4.4	5.1	5.9	7.3	8.9	15	20

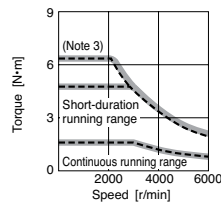
HG-JR 3000 Series (400V) Electromagnetic Brake Specifications (*1)

Servo Motor Model HG-JR_		534B	734B	1034B	1534B	2034B	3534B	5034B
Type		Spring actuated type safety brake						
Rated Voltage		24 VDC ⁺¹ %						
Power Consumption (W) at 20°C		11.7	11.7	11.7	11.7	11.7	23	23
Electromagnetic Brake Static Friction Torque (N•m)		6.6	6.6	6.6	6.6	6.6	16	16
Permissible Braking Work	Per Braking (J)	64	64	64	64	64	400	400
	Per Hour (J)	640	640	640	640	640	4000	4000
Electromagnetic Brake Life (*2)	Number of Times (Times)	5000						
	Work Per Braking (J)	64	64	64	64	64	400	400

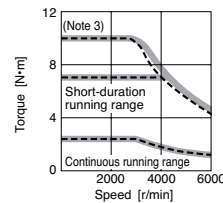
Notes:

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

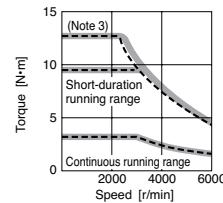
HG-JR534(B) (Note 1, 2)



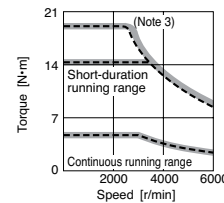
HG-JR734(B) (Note 1, 2)



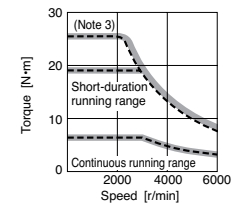
HG-JR1034(B) (Note 1, 2)



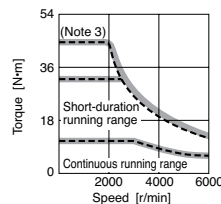
HG-JR1534(B) (Note 1, 2)



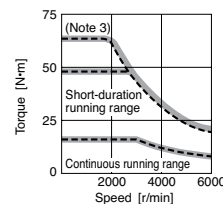
HG-JR2034(B) (Note 1, 2)



HG-JR3534(B) (Note 1, 2)



HG-JR5034(B) (Note 1, 2)



Notes: 1. — : For 3-phase 400 V AC.

2. - - - : For 3-phase 380 V AC.

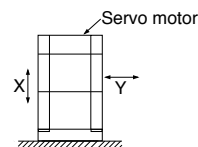
3. This value is applicable when the torque is maximally increased. Refer to "Combinations of HG-JR Servo Motor Series and Servo Amplifier (400 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque" on p. 2-6 in this catalog.

4. Torque drops when the power supply voltage is below the specified value.

How to Order

Servo Motor Notes:

1. Contact your local sales office if the load to motor inertia ratio exceeds the value in the table.
2. The shaft-through portion is excluded. For geared Servo Motor, IP rating of the reducer portion is equivalent to IP44. Refer to the *7 below for the shaft-through portion.
3. When unbalanced torque is generated, such as in a vertical lift machine, keep the unbalanced torque of the machine under 70% of the Servo Motor rated torque.
4. When the Servo Motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited if the effective torque is within the rated torque range. When the Servo Motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the following requirements are met.
 - HG-KR053(B): The load to motor inertia ratio is 8 times or less, and the effective torque is within the rated torque range.
 - HG-KR13(B): The load to motor inertia ratio is 4 times or less, and the effective torque is within the rated torque range.
5. The value in angle brackets is applicable when the Servo Motor is used with MR-J4-500B/MR-J4-500B-RJ/MR-J4-500B-RJ010/MR-J4-500A/MR-J4-500A-RJ.
6. The value in angle brackets is applicable when the maximum torque is increased. The maximum torque will be increased by changing the servo amplifier to be combined. Refer to "Combinations of HG-JR Servo Motor Series and Servo Amplifier (200 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque" in the User's Guide for the available combinations.
7. The value is applicable when the external regenerative resistors, GRZG400-Ω (standard accessory) are used with cooling fans (2 units of 92 mm x 92 mm, minimum airflow: 1.0 m³/min). Note that [Pr. PA02] must be changed.

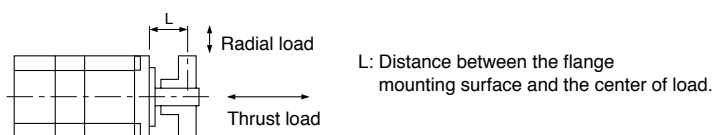


Annotations (*) for Servo Motor Specifications

1. The power supply capacity varies depending on the power supply impedance.
2. The regenerative braking frequency shows the permissible frequency when the Servo Motor, without a load and a regenerative option, decelerates from the rated speed to a stop. When a load is connected; however, the value will be the table value/(m+1), where m = Moment of inertia of load/Moment of inertia of Servo Motor. When the operating speed exceeds the rated speed, the regenerative braking frequency is inversely proportional to the square of (operating speed/rated speed). Take measures to keep the regenerative power [W] during operation below the tolerable regenerative power [W]. Use caution, especially when the operating speed changes frequently or when the regeneration is constant (as with vertical feeds). Select the most suitable regenerative option for your system with our capacity selection software.
3. In the environment where the Servo Motor is exposed to oil mist, oil and/or water, a standard specification Servo Motor may not be usable. Contact your local sales office for more details.
4. The vibration direction is shown in the diagram below. The numerical value indicates the maximum value of the component (commonly the bracket in the opposite direction of the Servo Motor shaft).

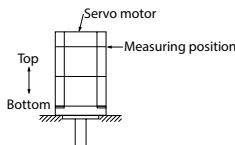
Fretting more likely occurs on the bearing when the Servo Motor stops. Thus, maintain vibration level at approximately one-half of the allowable value.

5. Refer to the diagram below for the permissible load for the shaft. Do not apply a load exceeding the value specified in the table on the shaft. The values in the table are applicable when each load is applied singly.

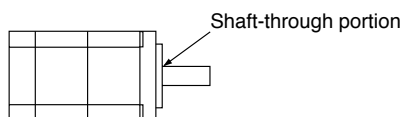


L: Distance between the flange mounting surface and the center of load.

6. V10 indicates that the amplitude of the Servo Motor itself is 10 μm or less. The following shows mounting posture and measuring position of the Servo Motor during the measurement:



7. Refer to the diagram below for shaft-through portion.



Servo Motor Selection 200V/100V

Stocked Motors

Model Number	Model Number
HG-JR53K	HG-KR053
HG-JR53BK	HG-KR053D
HG-JR73K	HG-KR053B
HG-JR73BK	HG-KR053BD
HG-JR103K	HG-KR13
HG-JR103BK	HG-KR13D
HG-JR153K	HG-KR13B
HG-JR153BK	HG-KR13BD
HG-JR203K	HG-KR23
HG-JR203BK	HG-KR23B
HG-JR353K	HG-KR43
HG-JR353BK	HG-KR43K
HG-JR503K	HG-KR43B
HG-JR503BK	HG-KR43BK
HG-JR5034BK	HG-KR73
	HG-KR73K
	HG-KR73B
	HG-KR73BK

HG-KR 10 3 B K

Symbol	Inertia/Capacity	Symbol	Rated Output [kW]
HG-KR	Low inertia, small capacity	05	0.05
		1	0.1
HG-JR	Low inertia, medium-large capacity	2	0.2
		4	0.4
		5	0.5
		7	0.75
		8	0.85
		10	1.0
		12	1.2
		15	1.5
		20	2.0
		30	3.0
		35	3.5 (*5)
		42	4.2

Notes:

1. Refer to electromagnetic brake specifications of each Servo Motor series in this catalog for the available models and detailed specifications.
2. Available in 0.1 kW or larger HG-KR series. Oil seal is installed in HG-JR series as a standard.
3. Oil seal is not installed in the geared Servo Motor.
4. Dimensions for HG-KR series with oil seal are different from those for the standard models. Contact your local sales office for more details.
5. For HG-JR353(B), the rated output varies depending on the servo amplifier to be combined. Refer to "HG-JR 3000 r/min Series (Low Inertia, Medium Capacity) (200 VClass) Specifications" for details.
6. Not all options available for every motor.

Symbol	Oil Seal
None	None (*5)
J	Installed (*2, *3, *4)

Symbol	Electromagnetic Brake
None	None
J	Installed (*1)

Symbol	Rated Speed [r/min]
1	1000
1M	1500
2	2000
3	3000

Combinations of Rotary Servo Motors and Servo Amplifier (200V/100V Class)

Model Number	MR-J4	MR-J4W2 (*1)	MR-J4W3 (*1)
HG-KR053(B)	MR-J4-10GF(-RJ), MR-J4-10B(-RJ), MR-J4-10B1(-RJ), MR-J4-10A(-RJ), MR-J4-10A1(-RJ)	MR-J4W2-22B, MR-J4W2-44B	MR-J4W3-222B, MR-J4W3-444B
HG-KR13(B)	MR-J4-10GF(-RJ), MR-J4-10B(-RJ), MR-J4-10B1(-RJ), MR-J4-10A(-RJ), MR-J4-10A1(-RJ)	MR-J4W2-22B, MR-J4W2-44B	MR-J4W3-222B, MR-J4W3-444B
HG-KR23(B)	MR-J4-20GF(-RJ), MR-J4-20B(-RJ), MR-J4-20B1(-RJ), MR-J4-20A(-RJ), MR-J4-20A1(-RJ)	MR-J4W2-22B, MR-J4W2-44B	MR-J4W3-222B, MR-J4W3-444B
HG-KR43(B)	MR-J4-40GF(-RJ), MR-J4-40B(-RJ), MR-J4-40B1(-RJ), MR-J4-40A(-RJ), MR-J4-40A1(-RJ)	MR-J4W2-44B, MR-J4W2-77B, MR-J4W2-1010B	MR-J4W3-444B
HG-KR73(B)	MR-J4-70GF(-RJ), MR-J4-70B(-RJ), MR-J4-70A(-RJ)	MR-J4W2-77B, MR-J4W2-1010B	-
HG-JR53(B)	MR-J4-60GF(-RJ), MR-J4-60B(-RJ), MR-J4-60A(-RJ)	MR-J4W2-77B	-
HG-JR73(B)	MR-J4-70GF(-RJ), MR-J4-70B(-RJ), MR-J4-70A(-RJ)	MR-J4W2-77B, MR-J4W2-1010B	-
HG-JR103(B)	MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ)	MR-J4W2-1010B	-

Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors" Servo Motors" in this guide.

Combinations of Rotary Servo Motor and Servo Amplifier (200V Class)

Model Number	MR-J4	MR-J4W2 (*1)	MR-J4W3 (*1)
HG-JR153(B)	MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ)	-	-
HG-JR203(B)	MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ)	-	-
HG-JR353(B)	MR-J4-350GF(-RJ), MR-J4-350B(-RJ), MR-J4-350A(-RJ)	-	-
HG-JR503(B)	MR-J4-500GF(-RJ), MR-J4-500B(-RJ), MR-J4-500A(-RJ)	-	-

Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors" Servo Motors" in this guide.

How to Accessorize

Combinations of Rotary Servo Motor and Servo Amplifier (400V class)

Model Number	MR-J4	MR-J4W2	MR-J4W3
HG-JR534(B)	MR-J4-60GF4(-RJ), MR-J4-60B4(-RJ), MR-J4-60A4(-RJ)	-	-
HG-JR734(B)	MR-J4-100GF4(-RJ), MR-J4-100B4(-RJ), MR-J4-100A4(-RJ)	-	-
HG-JR1034(B)	MR-J4-100GF4(-RJ), MR-J4-100B4(-RJ), MR-J4-100A4(-RJ)	-	-
HG-JR1534(B)	MR-J4-200GF4(-RJ), MR-J4-200B4(-RJ), MR-J4-200A4(-RJ)	-	-
HG-JR2034(B)	MR-J4-200GF4(-RJ), MR-J4-200B4(-RJ), MR-J4-200A4(-RJ)	-	-
HG-JR3534(B)	MR-J4-350GF4(-RJ), MR-J4-350B4(-RJ), MR-J4-350A4(-RJ)	-	-
HG-JR5034(B)	MR-J4-500GF4(-RJ), MR-J4-500B4(-RJ), MR-J4-500A4(-RJ)	-	-

Combinations of HG-JR Servo Motor Series and Servo Amplifier (200V Class) for Increasing the Maximum Torque to 400% of the Rated Torque The following combination of the HG-JR servo motor and the servo amplifier increases the maximum torque from 300% to 400% of the rated torque.

Model Number	MR-J4	MR-J4W2 (*1)	MR-J4W3 (*1)
HG-JR53(B) (*2)	MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ)	MR-J4W2-1010B	-
HG-JR73(B) (*2)	MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ)	-	-
HG-JR103(B) (*2)	MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ)	-	-
HG-JR153(B)	MR-J4-350GF(-RJ), MR-J4-350B(-RJ), MR-J4-350A(-RJ)	-	-
HG-JR203(B)	MR-J4-350GF(-RJ), MR-J4-350B(-RJ), MR-J4-350A(-RJ)	-	-
HG-JR353(B)	MR-J4-500GF(-RJ), MR-J4-500B(-RJ), MR-J4-500A(-RJ)	-	-
HG-JR503(B)	MR-J4-700GF(-RJ), MR-J4-700B(-RJ), MR-J4-700A(-RJ)	-	-

Notes:

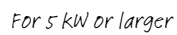
- Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors".
- When 1-phase 200 VAC input is used, increasing the maximum torque to 400% is not possible with HG-JR servo motor series.

Combinations of HG-JR Servo Motor Series and Servo Amplifier (400 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque The following combination of the HG-JR servo motor and the servo amplifier increases the maximum torque from 300% to 400% of the rated torque.

Model Number	MR-J4	MR-J4W2 (*1)	MR-J4W3 (*1)
HG-JR534(B)	MR-J4-100GF4(-RJ), MR-J4-100B4(-RJ), MR-J4-100A4(-RJ)	MR-J4W2-1010B	-
HG-JR734(B)	MR-J4-200GF4(-RJ), MR-J4-200B4(-RJ), MR-J4-200A4(-RJ)	-	-
HG-JR1034(B)	MR-J4-200GF4(-RJ), MR-J4-200B4(-RJ), MR-J4-200A4(-RJ)	-	-
HG-JR1534(B)	MR-J4-350GF4(-RJ), MR-J4-350B4(-RJ), MR-J4-350A4(-RJ)	-	-
HG-JR2034(B)	MR-J4-350GF4(-RJ), MR-J4-350B4(-RJ), MR-J4-350A4(-RJ)	-	-
HG-JR3534(B)	MR-J4-500GF4(-RJ), MR-J4-500B4(-RJ), MR-J4-500A4(-RJ)	-	-
HG-JR5034(B)	MR-J4-700GF4(-RJ), MR-J4-700B4(-RJ), MR-J4-700A4(-RJ)	-	-

Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors".

For 3.5 kW or smaller

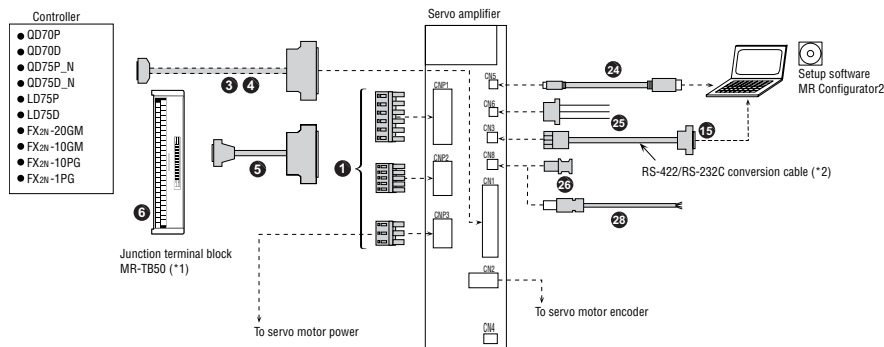


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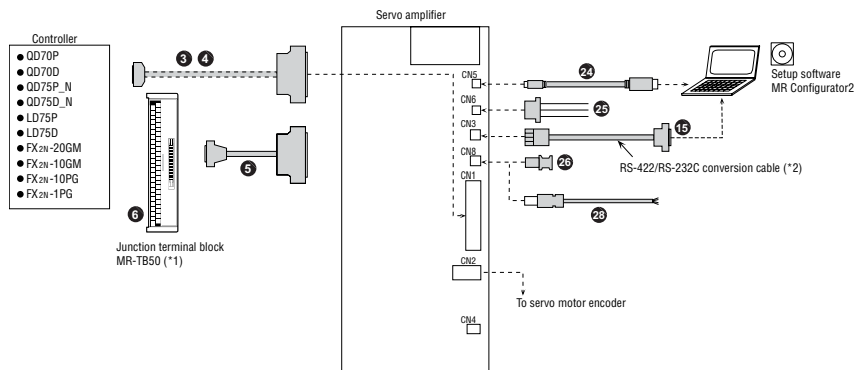
How to Accessorize

MR-J4-A Type Amplifier Cables and Connectors

For 3.5 kW or smaller



For 5 kW or larger

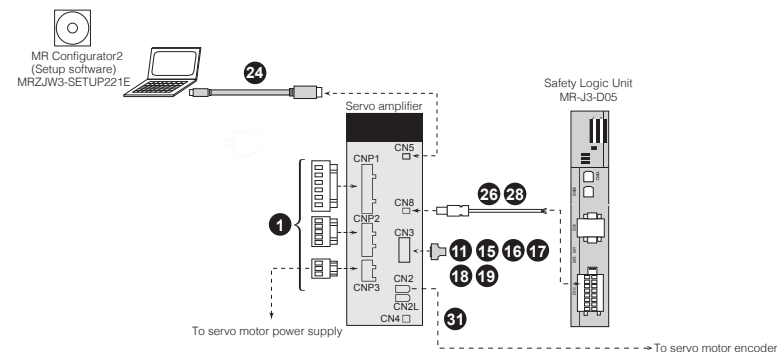


Notes:

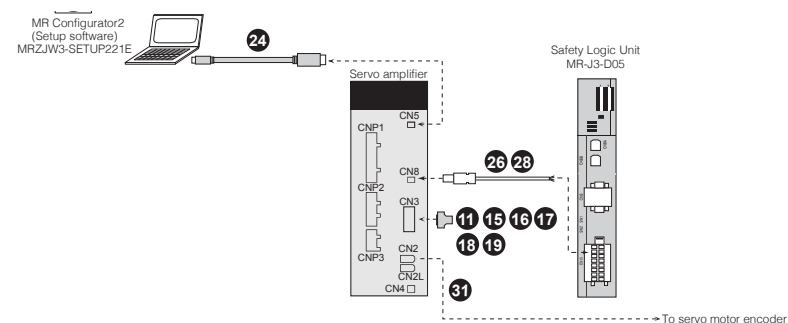
1. Refer to "Junction Terminal Block" in this selection guide.
2. Refer to "Products on the Market for Servo Amplifiers" in the MR-J4 catalog.

MR-J4-TM Type Amplifier Cables and Connectors

For 3.5 kW or smaller



For 5 kW or larger



How to Accessorize

For CNP1, CNP2, CNP3

Item	Model Number	Stocked Item	Protection Level	Description
①	Servo Amplifier Power Connector Set (Insertion Type) For MR-J4-100A or Smaller/MR-J4-100B or Smaller (*1, *2), MR-J40100TM or Smaller	Supplied with Amplifier	-	CNP1 connector CNP2 connector CNP3 connector Open tool
	Servo Amplifier Power Connector Set (Insertion Type) For MR-J4-200A/MR-J4-200B/MR-J4-350A/ MR-J4-350B (*1, *2), MR-J4-350TM	Supplied with Amplifier	-	CNP1 connector CNP2 connector CNP3 connector Open tool
②	Servo Amplifier Power Connector Set (Insertion Type) For MR-J4W2-B/MR-J4W3-B (*2, *3)	Supplied with Amplifier	-	CNP1 connector CNP2 connector CNP3A/CNP3B/ CNP3C connector Open tool

Notes:

1. This connector set is not required for 5 kW or larger servo amplifiers since terminal blocks are mounted. Refer to servo amplifier dimensions in this catalog for more details.
2. The wire size shows wiring specification of the connector. Refer to "Selection Example in HIV Wires for Servo Motors" in this catalog for examples of wire size selection.
3. Press bonding type is also available. Refer to "MR-J4W_-_B Servo Amplifier Instruction Manual" for details.

For CN1

Item	Model Number	Stocked Lengths	Protection Level	Description
③	Connector Set For MR-J4-A	MR-J3CN1	S	-
④	CN1 Pigtail Cable (50 Pin)	MR-J3CCN1CBL-_M (_ = cable length 3, 5m)	3, 5	-
⑤	Junction Terminal Block Cable (With Ground Clamp)	MR-J2M-CN1TBL_M (_ = cable length 0.5, 1m) (For use with MR-TB50 and MR-TB50MIN Junction Terminal Block)	05, 1	-
	Junction Terminal Block Cable (Without Ground Clamp)	MR-J2M-CN1TBL_M-G (_ = cable length 0.4, 1m) (For use with MR-TB50 and MR-TB50MIN Junction Terminal Block)	04, 1	-
⑥	Junction Terminal Block	MR-TB50	S	-
		MR-TB50MIN (reduced size - width = 145mm (5.71 in))	S	-

For Controller, CN1A, CN1B

Item	Model Number	Stocked Lengths	Protection Level	Description
⑦	SSCNET III Cable (Standard Cord for Inside Cabinet) Compatible With SSCNET III/(H) For MR-J4-B/MR-J4W2-B/MR-J4W3-B (*1)	MR-J3BUS_M (_ = cable length 0.15, 0.3, 0.5, 1, 3m)	S	-
⑧	SSCNET III Cable (Standard Cable for Outside Cabinet) Compatible With SSCNET III/(H) For MR-J4-B/MR-J4W2-B/MR-J4W3-B (*1)	MR-J3BUS_M-A (_ = cable length 5, 10, 20m)	S	-
⑨	SSCNET III Cable (Long Distance Cable, Long Bending Life) Compatible With SSCNET III/(H) For MR-J4-B/ MR-J4W2-B/MR-J4W3-B (*1)	MR-J3BUS_M-B (_ = cable length 30, 40, 50m)	S	-
	SSCNET III/H Cable (Super High Flex Long Distance) Compatible with SSCNET III/H only (not SSCNET III)	SC-J3BUS_M-C(B) (_ = cable length 10, 20, 30, 40, 50, 60, 70, 80, 90, 100m)	-	-
⑩	SSCNET III Connector Cap. Compatible With SSCNET III/(H). For MR-J4-B/MR-J4W2-B/MR-J4W3-B	Supplied with Amplifier	S	-

Notes 1: Read carefully through the precautions enclosed with the options before use.

For CN2L

Item	Model Number	Stocked Lengths	Protection Level	Description
③1	Flying Lead Cable for CN2L External Encoder Input, 1 Meter	MR-CN2LABZ1M-H	S	-

How to Accessorize

For CN3

Item	Model Number	Stocked Item	Protection Level	Description
11	Connector Set For MR-J4-B	MR-J2CN1	-	
12	Connector Set (Qty: 1 pc) For MR-J4W2-B/ MR-J4W3-B	MR-J2CMP2	S	-
13	Connector Set For MR-J4W2-B/MR-J4W3-B	MR-ECN1	S	-
14	Junction Terminal Block Cable For Connecting MR-J4W2-B/MR-J4W3-B and MR-TB26A	MR-TBNATBL_M (L = cable length 0.5, 1m)	S	-
15	RS-232 to RS-485 Converter PC to CN3 (3M)	SC-FRPC (Cable length 3m)	S	-
16	CN10 or CN3 Signal Connector (20 pin)	MR-J2CN1	S	-
17	CN10 or CN3 Pigtail Cable (20 pin)	MR-CCN1CBL_M (L = cable length 3, 5m)	3, 5	-
18	Cable for PS7DW-20V14B-F Terminal Block	MR-J2HBUS_M	05, 1, 3, 5	-
19	20 Pin Terminal Block for J4-B (TB20 cannot be used)	PS7DW-20V14B-F	S	-
20	CN6 Pigtail Cable (26 Pin)	MR-ECN1CBL-3M	S	-
21	Junction Terminal Block (For use with Cable No. 14)	MR-TB26A	S	-

For CN5 and CN6

Item	Model Number	Stocked Lengths	Protection Level	Description
22	Battery Cable For Connecting MR-J4W2-B/ MR-J4W3-B and MR-BT6VCASE	MR-BT6V1CBL_M (L = cable length 0.3, 1m)	S	-
23	Junction Battery Cable For MR-J4W2-B/MR-J4W3-B	MR-BT6V2CBL_M (L = cable length 0.3, 1m)	S	-

For CN8

Item	Model Number	Stocked Lengths	Protection Level	Description
24	CN5 Personal Computer Communication Cable (USB cable) For MR-J4-A/MR-J4-B/MR-J4W2-B/ MR-J4W3-B, MR-J4-DU, MR-J4-TM	MR-J3USBCBL3M	3m	-
25	CN6 Monitor Cable For MR-J4-A	MR-J3CN6CBL1M	1m	-

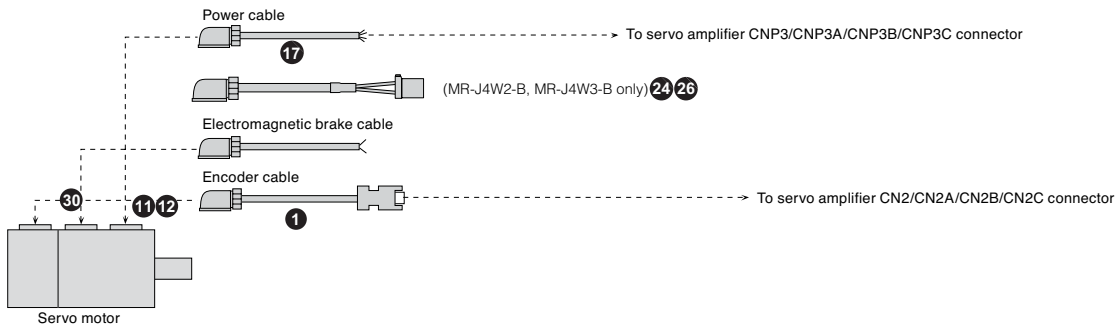
Item	Model Number	Stocked Lengths	Protection Level	Description
26	Short-Circuit Connector For MR-J4-A/MR-J4-B/ MR-J4W2-B/MR-J4W3-B, MR-J4-TM	1971153-1 (Supplied with Amplifier)	S	-
28	STO Cable	MR-J4-D05UDL3M-B	3m	-

For MR-J3-D05 CN9 and CN10

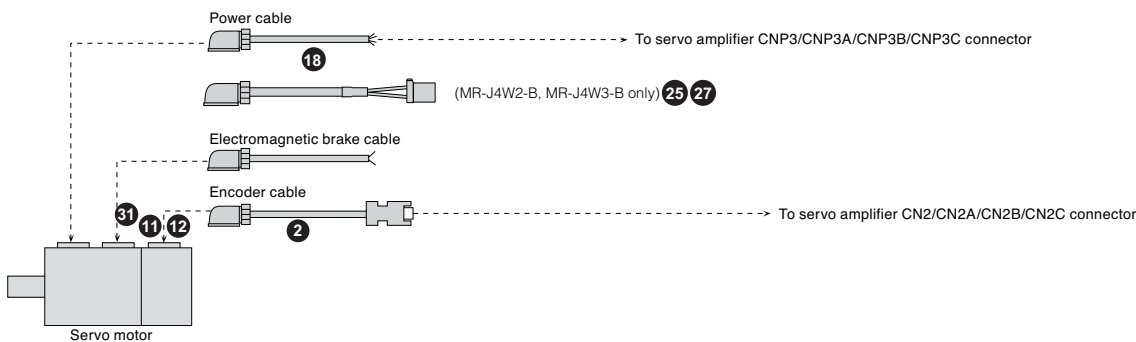
Item	Model Number	Stocked Lengths	Protection Level	Description
29	CN9 Connector	Supplied with MR-J3-D05	-	-
30	CN10 Connector	Supplied with MR-J3-D05	-	-

J4 Servo Motor Cables and Connectors

For HG-KR Servo Motor Series: Encoder Cable Length 10m or Shorter
For leading the cables out in direction of load side (*1)

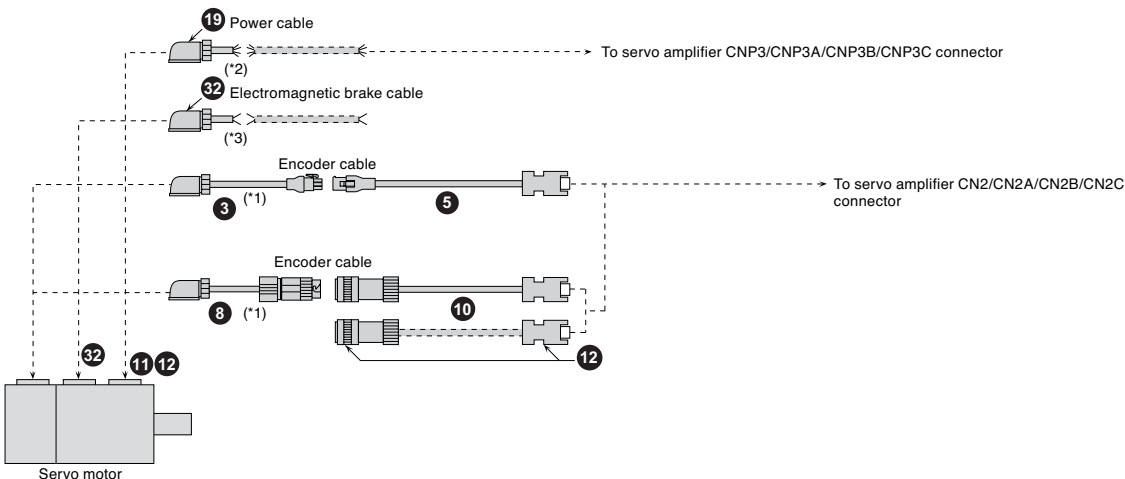


For HG-KR Servo Motor Series: Encoder Cable Length 10m or Shorter
For leading the cables out in opposite direction of load side (*1)



Note: Cables for leading two different directions may be used for one Servo Motor.

For HG-KR Servo Motor Series: Encoder Cable Length Over 10m
For leading the cables out in direction of load side (*4)

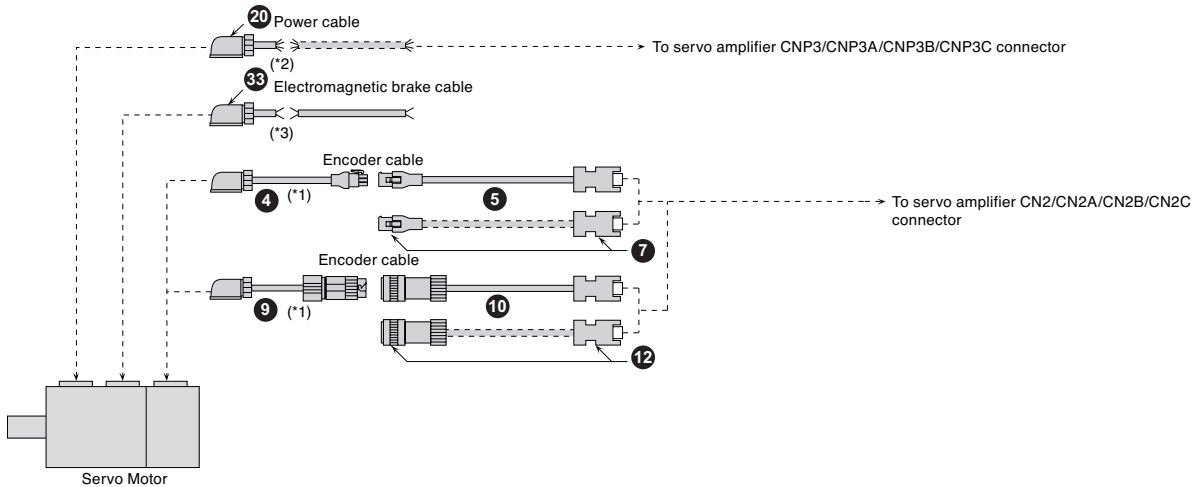


Notes:

1. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
2. Relay a cable using MR-PWS2CBL03M-A1-L or MR-PWS2CBL03M-A2-L. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
3. Relay a cable using MR-BKS2CBL03M-A1-L or MR-BKS2CBL03M-A2-L. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
4. Cables for leading two different directions may be used for one Servo Motor.
5. Cables drawn with dashed lines need to be fabricated by user. Refer to relevant Servo Motor Instruction Manual for fabricating the cables.

How to Accessorize

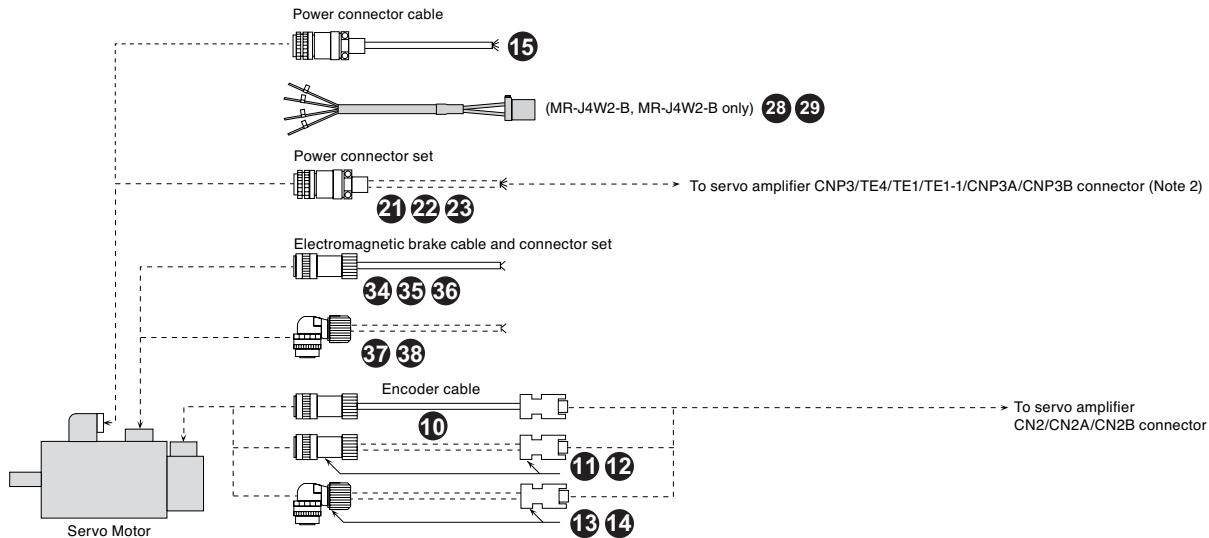
For HG-KR Servo Motor Series: Encoder Cable Length Over 10m
For leading the cables out in opposite direction of load side (*4)



Notes:

1. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
2. Relay a cable using MR-PWS2CBL03M-A1-L or MR-PWS2CBL03M-A2-L. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
3. Relay a cable using MR-BKS2CBL03M-A1-L or MR-BKS2CBL03M-A2-L. This cable does not have a long bending life. Thus, be sure to fix the cable before using.
4. Cables for leading two different directions may be used for one Servo Motor.
5. Cables drawn with dashed lines need to be fabricated by user. Refer to relevant Servo Motor Instruction Manual for fabricating the cables.

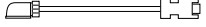
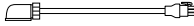


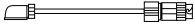



For HG-JR Rotary Servo Motor 3000 r/min Series



Note:

1. Cables drawn with dashed lines need to be fabricated by user. Cables for leading two different directions may be used for one Servo Motor. Refer to relevant Servo Motor Instruction Manual for fabricating the cables.
2. The connector for U, V, and W varies depending on the servo amplifier capacities. Refer to the dimensions of the relevant Servo Amplifier in this catalog for details.

Encoder Cables and Connectors




Item			Model Number	Available Lengths	Stocked Lengths	Protection Level	Description
①	Encoder Cable 10m or Shorter (Direct Connection Type) (*2)	Lead Out in Direction of Motor Shaft For HG-KR	MR-J3ENCBL_M-A1-H	2, 3, 5, 7, 8, 10	2, 3, 5, 10	IP65	Encoder connector Servo amplifier connector 
			MR-J3ENCBL_M-A1-L	2, 5, 10	2, 5, 10	IP65	
②		Lead Out in Opposite Direction of Motor Shaft For HG-KR	MR-J3ENCBL_M-A2-H	1, 2, 5, 5, 10	1, 2, 5, 5, 10	IP65	
			MR-J3ENCBL_M-A2-L	1, 2, 5, 10	1, 2, 5, 10	IP65	
③	Encoder Cable. (Junction Type) Use This In Combination With (5) or (7). (*2)	Lead Out in Direction of Motor Shaft For HG-KR	MR-J3JCBLO3M-A1-L	3	3	IP20	Encoder connector Junction connector 
④		Lead Out in Opposite Direction of Motor Shaft For HG-KR	MR-J3JCBLO3M-A2-L	3	3	IP20	
⑤	Encoder Cable. Use This In Combination With (3) or (4). (*2)	For HG-KR (Junction Type)	MR-EKCBL_M-H (*1, *3)	2, 5, 10, 15, 20, 30, 50	10, 20, 30, 50	IP20	Junction connector Servo amplifier connector 
			MR-EKCBL_M-L (*1, *3)	2, 5, 10, 15, 20, 30	-	IP20	
⑦	Encoder Connector Set	For HG-KR (Junction Type) For Connecting Load-Side Encoder	MR-ECNM	-	S	IP20	
⑧	Exceeding 10m (Relay Type) Use this in combination with (10) or (11). (*2)	For HG-KR (Junction Type)	MR-J3JSCBLO3M-A1-L (*1, *3)	3	3	IP65 (*4)	Encoder connector Junction connector 
⑨		For HG-KR (Junction Type)	MR-J3JSCBLO3M-A2-L (*1)	3	3	IP65 (*4)	
⑩	Encoder Cable (*2) For HG-KR (Junction Type, in combination with (8) or (9))		MR-J3ENSCBL_M-H (*1)	2, 5, 10, 15, 17, 20, 30, 40, 50, 60	2, 5, 10, 20, 30	IP67	Junction connector or encoder connector Servo amplifier connector 
	For HG-JR53, 73, 103, 153, 203, 353, 503, 1034, 1534, 2034, 3534, 5034		MR-J3ENSCBL_M-L (*1)	2, 5, 10, 20, 30	2, 5	IP67	
	HG-JR53, 534, 73, 734, 103, 1034, 153, 1534, 203, 2034, 353, 3534, 503, 5034		MR-J3ENS4CBL_M-H	50, 60, 70, 80, 90, 100	-	IP67	
⑪	Encoder connector set (*5) (one-touch connection type) For HG-KR (junction type) For HG-JR53, 73, 103, 153, 203, 353, 503, 1034, 1534, 2034, 3534, 5034		MR-J3SCNS	-	S	IP67	Encoder Side Amplifier Side 
⑫	Encoder connector set (*3, *5) (screw type) For HG-JR53, 73, 103, 153, 203, 353, 503, 1034, 1534, 2034, 3534, 5034		MR-ENCNS2	-	S	IP67	
⑬	Encoder connector set (*5) (one-touch connection type) For HG-JR53, 73, 103, 153, 203, 353, 503, 1034, 1534, 2034, 3534, 5034		MR-J3SCNSA	-	S	IP67	
⑭	Encoder connector set (*3, *5) (screw type) For HG-JR53, 73, 103, 153, 203, 353, 503, 1034, 1534, 2034, 3534, 5034		MR-ENCNS2A	-	S	IP67	

Notes:

- The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/Servo Motor. If the IP rating of the servo amplifier/Servo Motor differs from that of these connectors, overall IP rating depends on the lowest of all.
- H and -L indicate a bending life. -H indicates a long bending life, and -L indicates a standard bending life.
- This encoder cable is available in four-wire type. Parameter setting is required to use the four-wire type encoder cable. Refer to relevant Servo Amplifier Instruction Manual for details.
- The encoder cable is rated IP65 while the junction connector itself is rated IP67.
- Use MR-EKCBL_M-H and MR-ECNM to connect to an output cable for AT343A, AT543A-SC or AT545A-SC scales manufactured by Mitutoyo Corporation.




How to Accessorize

Motor Power Supply Cables

Item		Motor Model Number	Cable Number	Available Lengths	Stocked Lengths	Protection Level	Description
15	Standard-Flex, Unshielded Type Cables (Straight Type Connector Only)	HG-JR53(B), 534(B), 73(B), 734(B), 103(B), 1034(B), 153(B), 1534(B), 203(B), 2034(B), 3534(B) (*1)	MR-J3P2-_M	2, 3, 5, 10, 15, 20, 25, 30, 40, 50	2, 5, 10, 15, 20, 30	IP65	
		HG-JR503(B)	MR-J3P10-_M	2, 5, 10, 15, 20, 25, 30	5, 10		
		HG-JR5034(B)	MR-J3P11-_M	2, 5, 10, 15, 20, 25, 30, 50	5, 10		
	High-Flex, Shielded Type Cables (Straight Type Connector Only) (*2)	HG-JR53(B), 534(B), 73(B), 734(B), 103(B), 1034(B), 153(B), 1534(B), 203(B), 2034(B), 3534(B) (*1)	MR-J3PWS2-_M	2, 5, 10, 15, 17, 20, 25, 30, 40	2, 5, 10, 15, 20, 30	IP67	
		HG-JR503(B)	MR-J3PWS10-_M	2, 5, 10, 15, 20, 25, 30	2, 5, 10, 30		
		HG-JR5034(B)	MR-J3PWS11-_M	2, 5, 10, 15, 20, 25, 30, 50	5, 10, 20, 30		
16	CN2 Connector Only		MR-J3CN2	-	S	IP67	

Note 1: Must order separate brake cable for these motors.

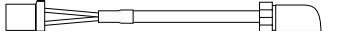
Motor Power Supply Cables

Item			Model Number	Available Lengths	Stocked Lengths	Protection Level (*1)	Description
17	10m Or Shorter (Direct Connection Type)	Power Supply Cable For HG-KR. Lead Out In Direction Of Motor Shaft (Non-Shielded) (*2)	MR-PWS1CBL_M-A1-H (*1)	2, 3, 5, 7, 8, 10	2, 3, 5, 10	IP65	
			MR-PWS1CBL_M-A1-L (*1)	2, 3, 5, 10	2, 5, 10	IP65	
		Power Supply Cable for HG-KR Series Motor, Lead Out in Direction of Motor Shaft (Shielded)	MR-J3PS_M-A1	3, 5, 10	3, 5	IP65	
18		Power Supply Cable For HG-KR Series Motor. Lead Out In Opposite Direction of Motor Shaft (Shielded)	MR-J3PS_M-A2	3, 5, 10	3, 5, 10	IP65	
		Power Supply Cable For HG-KR. Lead Out In Opposite Direction of Motor Shaft (Non-Shielded) (*2)	MR-PWS1CBL_M-A2-H (*1)	1, 2, 5, 5, 10, 15	1, 2, 5, 5, 10	IP65	
			MR-PWS1CBL_M-A2-L (*1)	1, 2, 5, 10	2, 5, 10	IP65	
19	Exceeding 10m (Relay Type)	Power Supply Cable For HG-KR (Junction Type) Motor Lead Out In Direction Of Motor Shaft (Non-Shielded) (*2)	MR-PWS2CBL03M-A1-L	3	3	IP55	
20		Power Supply Cable For HG-KR (Junction Type) Motor Lead Out In Opposite Direction Of Motor Shaft (Non-Shielded) (*2)	MR-PWS2CBL03M-A2-L	3	3	IP55	
21	Power Connector Set For HG-JR53, 73, 103, 153, 203, 534, 734, 1034, 1534, 2034, 3534, 5034		MR-PWCNS4	-	S	IP67	
22	Power Connector Set For HG-JR353, 503		MR-PWCNS5	-	S	IP67	


Notes:

- The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/Servo Motor. If the IP rating of the servo amplifier/Servo Motor differs from that of these connectors, overall IP rating depends on the lowest of all.
- H and -L indicate a bending life. -H indicates a long bending life, and -L indicates a standard bending life.

Motor Power Cable for HG-KR Rotary Servo Motor Series to MR-J4W2/MR-J4W3 (Direct Connection Type)


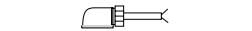
Item		Model Number	Available Lengths	Stocked Lengths	Description
24	Lead Out in Direction of Motor Shaft Standard Bending Life	SC-EPWS1CBL_M-A1-L	2, 5	5	
25	Lead Out in Opposite Direction of Motor Shaft Standard Bending Life	SC-EPWS1CBL_M-A2-L	2, 5	2, 5	
26	Lead Out in Direction of Motor Shaft Long Bending Life	SC-EPWS1CBL_M-A1-H	2, 5	2, 5	
27	Lead out in Opposite Direction of Motor Shaft Long Bending Life	SC-EPWS1CBL_M-A2-H	2, 5	2, 5	

Motor Power Cable for HG-JR Rotary Servo Motor Series to MR-J4W2/MR-J4W3

Item		Model Number (*1)	Available Lengths	Stocked Lengths	Description
28	Standard Bending Life	SC-EPWS2CBL_M-L	2, 5, 10, 20, 30	5, 10	
29	Long Bending Life	SC-EPWS2CBL_M-H	2, 5, 10, 20, 30	5, 10	

Note 1. A separate motor-side power supply connector is required.

Motor Brake Cables for HG-KR Rotary Servo Motors


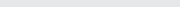
Item			Model Number	Available Lengths	Stocked Lengths	Protection Level (*1)	Description
30	Brake Cable for HG-KR Series 10m or Shorter (Direct Connection Type) (*2)	Lead Out in Direction of Motor Shaft	MR-BKS1CBL_M-A1-H (*1)	2, 5, 7, 10	2, 5, 10	IP65	
31		Lead Out in Opposite Direction of Motor Shaft	MR-BKS1CBL_M-A1-L (*1)	2, 5, 10	-	IP65	
			MR-BKS1CBL_M-A2-H (*1)	2, 5, 10	2, 5, 10	IP65	
			MR-BKS1CBL_M-A2-L (*1)	2, 5, 10	-	IP65	
32	Brake Cable for HG-KR Series Exceeding 10m (Relay Type) (*2)	Lead Out in Direction of Motor Shaft	MR-BKS2CBL03M-A1-L (*1)	3	3	IP55	
33		Lead Out in Opposite Direction of Motor Shaft	MR-BKS2CBL03M-A2-L (*1)	3	3	IP55	

Notes:

- The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/Servo Motor. If the IP rating of the servo amplifier/Servo Motor differs from that of these connectors, overall IP rating depends on the lowest of all.
- H and -L indicate a bending life. -H indicates a long bending life, and -L indicates a standard bending life.

How to Specify

Brake Cables for HG-JR Servo Motor Series

Item			Model Number	Available Lengths	Stocked Lengths	Protection Level	Description
34	Standard-Flex, Unshielded	HG-JR(4)B 3000 RPM	MR-J3BK-_M	2, 3.5, 5, 10, 15, 20, 25, 30, 40, 50	2, 5, 10, 20, 30	IP67	
	High-Flex, Shielded	HG-JR(4)B 3000 RPM	MR-J3BRKS1-_M	2, 5, 10, 15, 20, 25, 30, 40, 50	2, 5, 10, 15, 20, 30	IP67	

Brake Connector Set

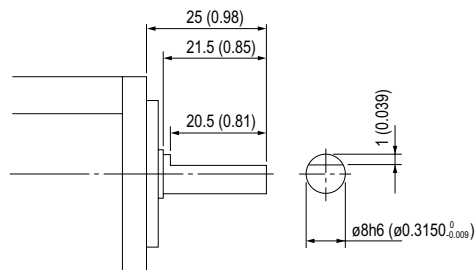
Item		Model Number	Stocked Item	Protection Level (*1)	Description
35	Electromagnetic Brake Connector Set (One-Touch Connection, Straight) For HG-JR53(4)B, 73(4)B, 103(4)B, 153(4)B, 203(4)B, 353(4)B, 503(4)B,	MR-BKCNS1	S	IP67	
36	Electromagnetic Brake Connector Set (Screw Connection, Straight) For HG-JR53(4)B, 73(4)B, 103(4)B, 153(4)B, 203(4)B, 353(4)B, 503(4)B,	MR-BKCNS2	S	IP67	
37	Electromagnetic Brake Connector Set (One-Touch Connection, Angled) For HG-JR53(4)B, 73(4)B, 103(4)B, 153(4)B, 203(4)B, 353(4)B, 503(4)B	MR-BKCNS1A	S	IP67	
38	Electromagnetic Brake Connector Set (Screw Connection, Angled) For HG-JR53(4)B, 73(4)B, 103(4)B, 153(4)B, 203(4)B, 353(4)B, 503(4)B	MR-BKCNS2A	S	IP67	

Note 1: The IP rating indicated is for the connector's protection against ingress of dust and water when coupled to a servo amplifier/servo motor. If the IP rating of the servo amplifier/servo motor differs from that of these connectors, the overall IP rating depends on the lowest of all.

MR-J4 Motor Shaft Details and Servo Motor Dimensions

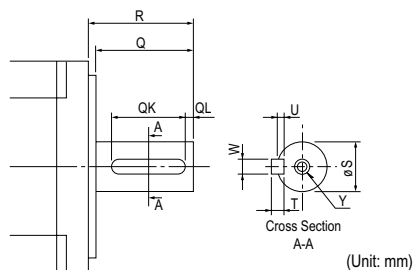
HG-KR Series:

D-Cut Shaft (50W & 100W Motors Only)



Unit: mm (inch)

Keyway With Key Included



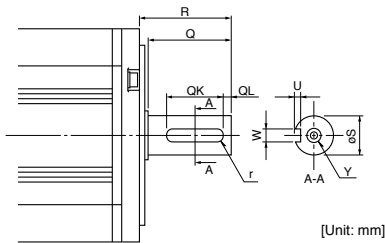
Motor Model	Capacity (W)	Variable Dimensions								
		T	S	R	Q	W	QK	QL	U	Y
HG-KR_K	23(B)	5	14h6	30 (1.18)	26	5	20 (0.79)	3	3	M4 Depth
	43(B)	(0.20)	(0.554)			(0.20)		(0.12)	(0.12)	15 (0.59)
	73(B)	6	19h6	40 (1.57)	36	6	25 (0.98)	5	3.5	M5 Depth
		(0.24)	(0.7480)			(0.24)		(0.20)	(0.14)	20 (0.79)

General Notes:

- The Servo Motors with special shaft end are not suitable for frequent start/stop applications.
- A key is not supplied with the Servo Motor. The key shall be installed by the user.

HG-JR 3000 Series 200V

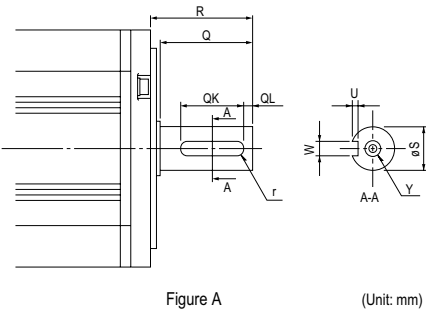
Keyway With No Key Supplied (Customer must supply key or order key part separately below)



Motor Model	Capacity (W)	Variable Dimensions										Key Dimensions	Key Model Number	Stocked Item
		S	R	Q	W	QK	QL	U	r	Y				
HG-JR_K	53(B) 73(B) 103(B) 153(B) 203(B)	16h6	40	30	5 ⁰ _{-0.030}	25	2	^{+0.1} ₃ 0	2.5	M4 screw depth 15	(N/A) Key to be supplied by customer.			
	353(B) 503(B)	28h6	55	50	8 ⁰ _{-0.036}	36	5	^{+0.2} ₄ 0	4	M8 screw depth 20	8x7x28	MTR KEY 8-7-28	S	

HG-JR 3000 Series 400V

Keyway With No Key Supplied (Customer must supply key or order key part separately below)



Motor Model	Capacity (W)	Variable Dimensions										Key Dimensions	Key Model Number	Stocked Item
		S	R	Q	W	QK	QL	U	r	Y				
HG-JR_K	534(B) 734(B) 1034(B) 1534(B) 2034(B)	16h6	40	30	5 ⁰ _{-0.030}	25	2	^{+0.1} ₃ 0	2.5	M4 screw depth 15	(N/A) Key to be supplied by customer.			
	3534(B) 5034(B)	28h6	55	50	8 ⁰ _{-0.036}	36	5	^{+0.2} ₄ 0	4	M8 screw depth 20	8x7x28	MTR KEY 8-7-28	S	

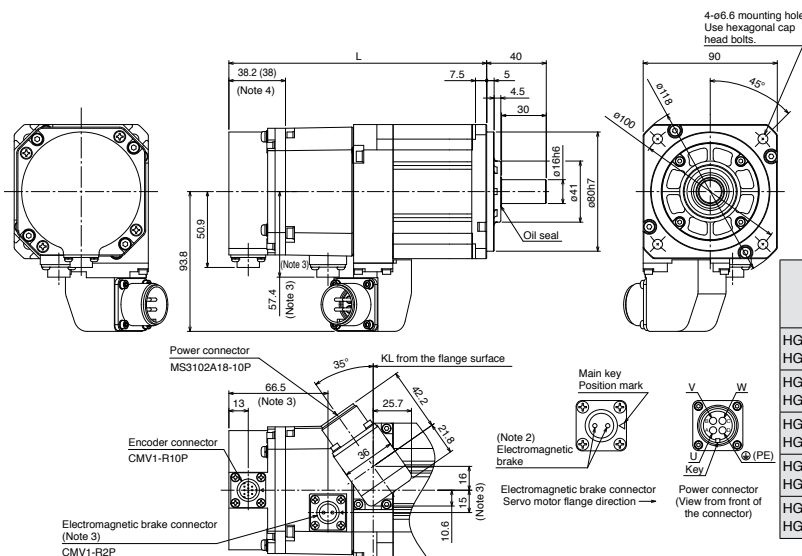
General Notes

1. The Servo Motors with special shaft end are not suitable for frequent start/stop applications.
2. A key is not supplied with the Servo Motor. The key shall be installed by the user.

How to Specify

HG-JR Series Dimensions (*1, *5)

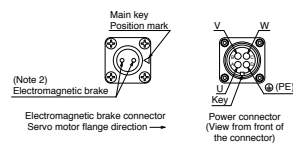
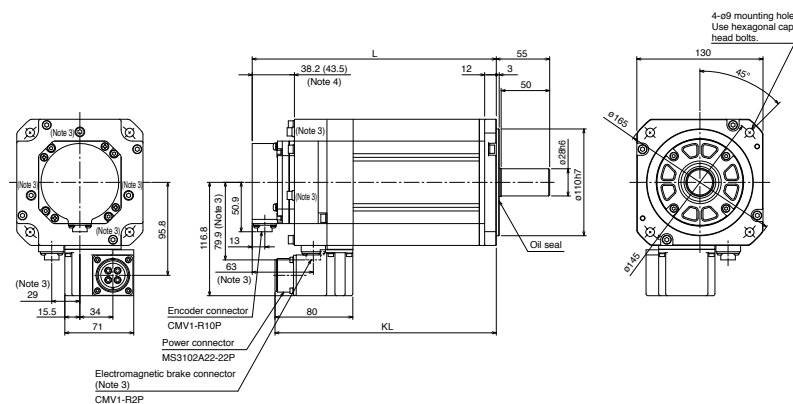
HG-JR53(B), HG-JR73(B), HG-JR103(B), HG-JR153(B), HG-JR203(B)
HG-JR534(B), HG-JR734(B), HG-JR1034(B), HG-JR1534(B), HG-JR2034(B)



Model	Variable dimensions (Note 4)	
	L	KL
HG-JR53(B)	127.5	
HG-JR534(B)	(173)	76
HG-JR73(B)	145.5	
HG-JR734(B)	(191)	94
HG-JR103(B)	163.5	
HG-JR1034(B)	(209)	112
HG-JR153(B)	199.5	
HG-JR1534(B)	(245)	148
HG-JR203(B)	235.5	
HG-JR2034(B)	(281)	184

[Unit: mm]

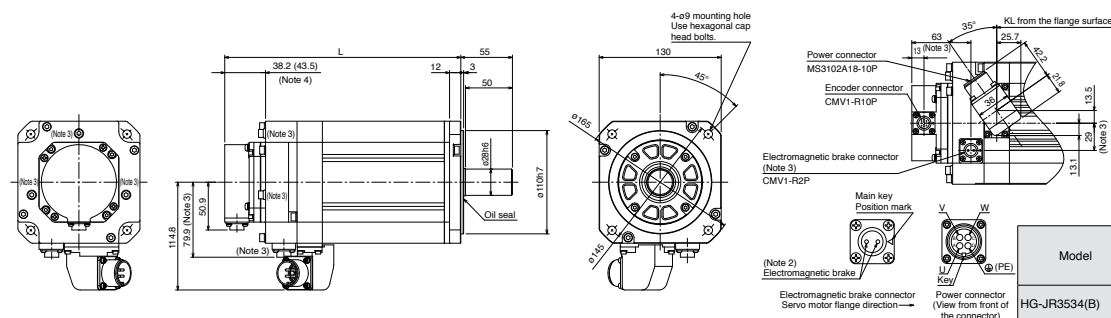
HG-JR353(B), HG-JR503(B)



Model	Variable dimensions (Note 4)	
	L	KL
HG-JR353(B)	213	228
HG-JR503(B)	267	282

[Unit: mm]

HG-JR3534(B), HG-JR5034(B)



Notes:

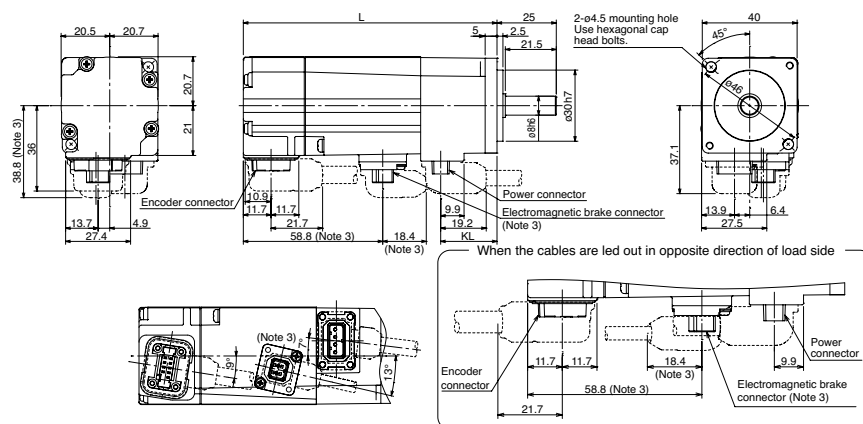
1. For dimensions without tolerance, general tolerance applies.
2. The electromagnetic brake terminals do not have polarity.
3. Only for the models with electromagnetic brake.
4. Dimensions in brackets are for the models with electromagnetic brake.
5. Use a friction coupling to fasten a load.

Model	Variable dimensions (Note 4)	
	L	KL
HG-JR3534(B)	213	161
HG-JR5034(B)	267	215

[Unit: mm]

HG-KR Series Dimensions (*1, *5, *6)

HG-KR053(B), HG-KR13(B)



Power connector

Pin No.	Signal name
1	⊕ (PE)
2	U
3	V
4	W

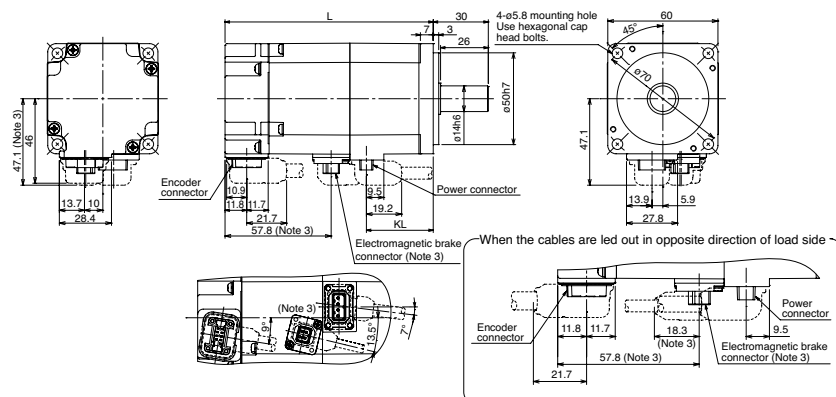
Electromagnetic brake connector (Note 2)

Pin No.	Signal name
1	B1
2	B2

Model	Variable dimensions (Note 4)	
	L	KL
HG-KR053(B)	66.4 (107)	23.8
HG-KR13(B)	82.4 (123)	39.8

[Unit: mm]

HG-KR23(B), HG-KR43(B)



Power connector

Pin No.	Signal name
1	⊕ (PE)
2	U
3	V
4	W

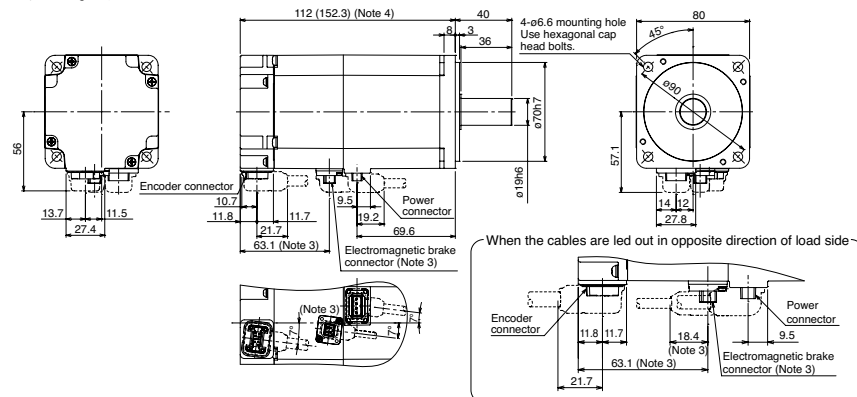
Electromagnetic brake connector (Note 2)

Pin No.	Signal name
1	B1
2	B2

Model	Variable dimensions (Note 4)	
	L	KL
HG-KR23(B)	76.6 (113.4)	36.4
HG-KR43(B)	98.3 (135.1)	58.1

[Unit: mm]

HG-KR73(B)



Power connector

Pin No.	Signal name
1	⊕ (PE)
2	U
3	V
4	W

Electromagnetic brake connector (Note 2)

Pin No.	Signal name
1	B1
2	B2

[Unit: mm]

Notes:

- For dimensions without tolerance, general tolerance applies.
- The electromagnetic brake terminals (B1, B2) do not have polarity.
- Only for the models with electromagnetic brake.
- Dimensions in brackets are for the models with electromagnetic brake.
- Use a friction coupling to fasten a load.
- Servo motors with oil seal (HG-KR_J) have different dimensions. Contact your local sales office for more details.

iQ-F Programmable Controllers

Bimba partners with Mitsubishi® Electric to offer a cost-effective programmable controllers that provide ease of use, functionality, and high performance in a small panel footprint. These controllers provide open connectivity and flexible networking with Ethernet, Modbus, and serial communications options.



Contents

81	IQ-F Series Programmable Controllers
81	– FX5U Configuration
82	– FX5UC Configuration
84	– AC/DC Power Supply Specifications

85	Specifications
85	– FX5U Main Units with 32 I/O
85	– FX5U Main Units with 64 I/O
85	– FX5U Main Units with 80 I/O
86	– FX5UC Main Units with 32 I/O
86	– FX5UC Main Units with 64 I/O
86	– FX5UC Main Units with 96 I/O

86	I/O Modules
86	– Unpowered
87	– Powered
88	– High-Speed Pulse I/O
88	– Analog I/O
90	– Temperature Input Module

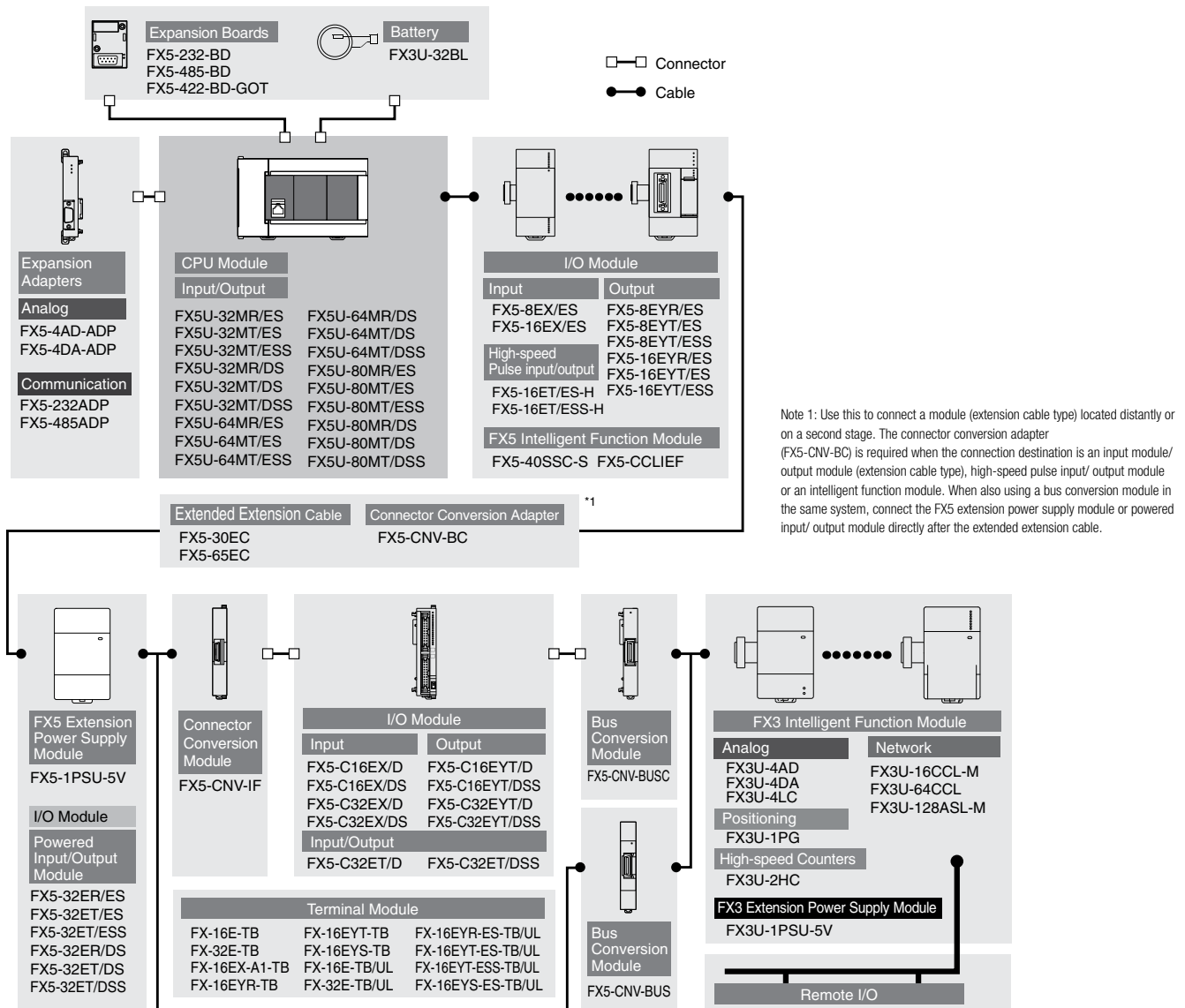
90	Intelligent Function Modules
90	– Communications and Network Expanding
91	– CC-Link IE Field
91	– Modbus and Serial Communications Expansion Adapters
91	– Extension Power Supply
92	– Bus Conversion Module

92	Accessories
92	– SD Memory Card, Battery, and Communication Cable

IQ-F Series Programmable Controllers

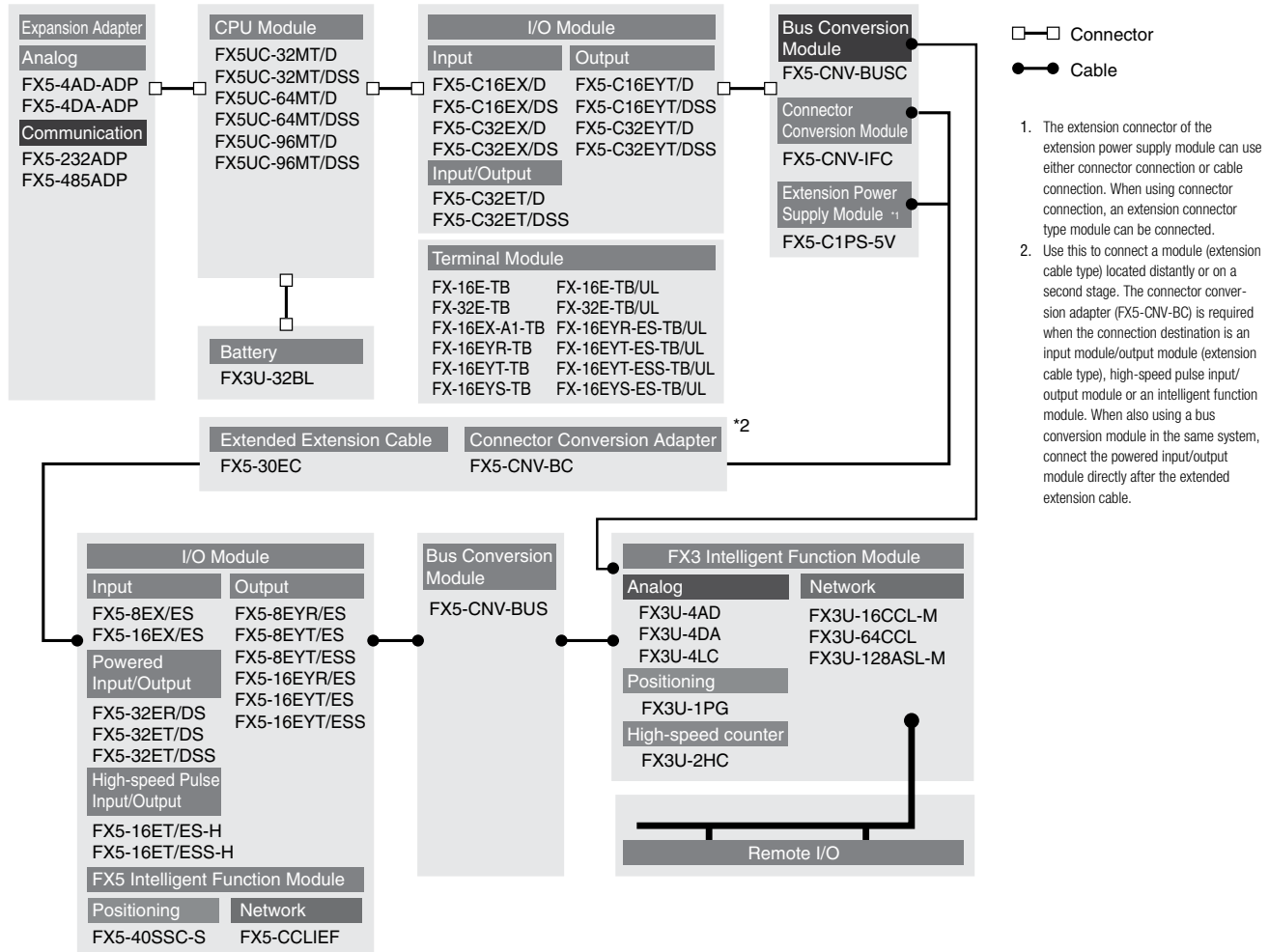
The iQ-F Series is a completely new controller with an elegant design that does not waver from the familiar look-and-feel of Mitsubishi Electric's compact controllers. We took the same control capabilities that have been running industry applications reliably for decades, and further refined them for an even better user experience. We also developed powerful new capabilities to elevate the iQ-F Series compact controller to be on par with the iQ-Platform, delivering intuitive programming, maximized performance, and seamless integration with all Mitsubishi Electric and e-factory alliance products. The iQ-F is here to help you build the next generation of industrial solutions in even more efficient ways.

FX5U Configuration



How it Works

FX5UC Configuration

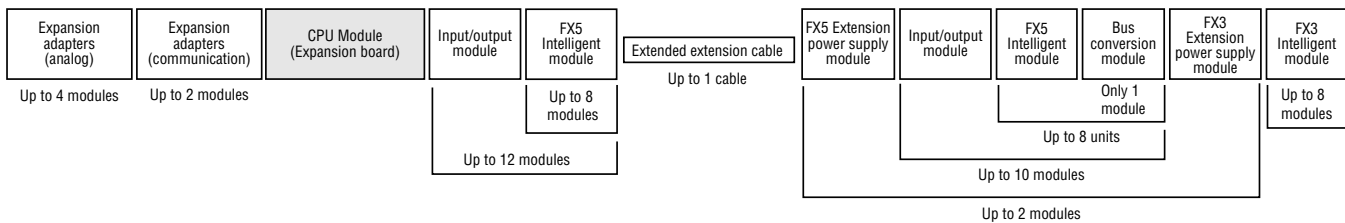


Configuration Rules

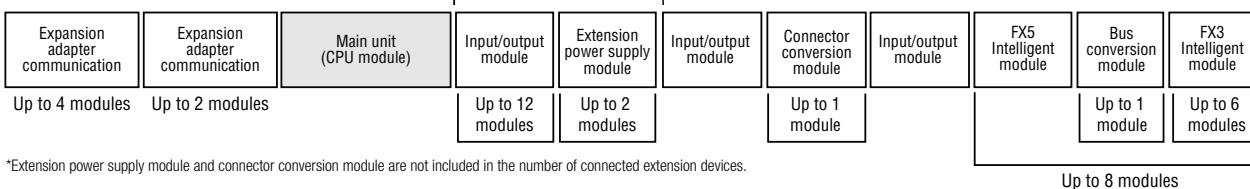
CAUTION: For full configuration details please refer to the respective hardware manuals.

1. Number of connected extension device:

FX5U



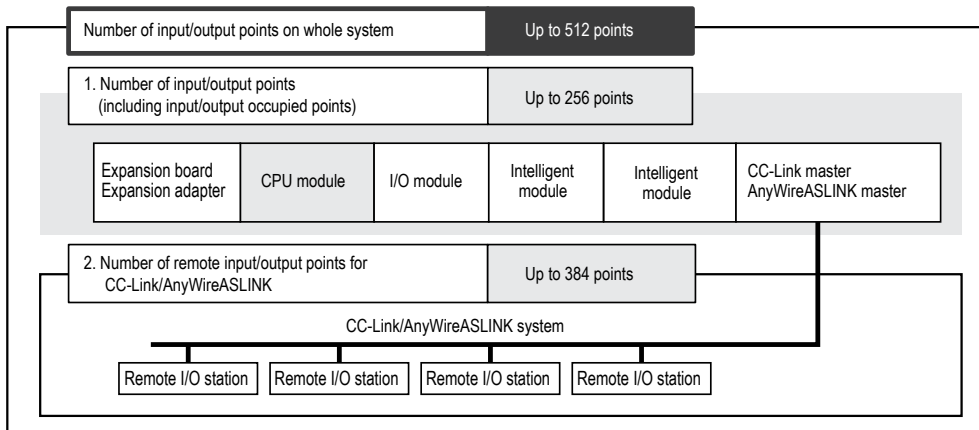
FX5UC



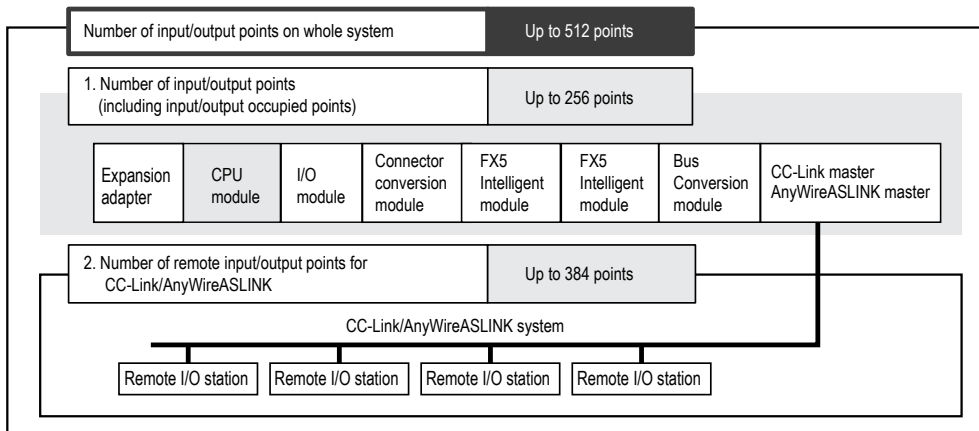
*Extension power supply module and connector conversion module are not included in the number of connected extension devices.

2. Number of input/output points:

FX5U



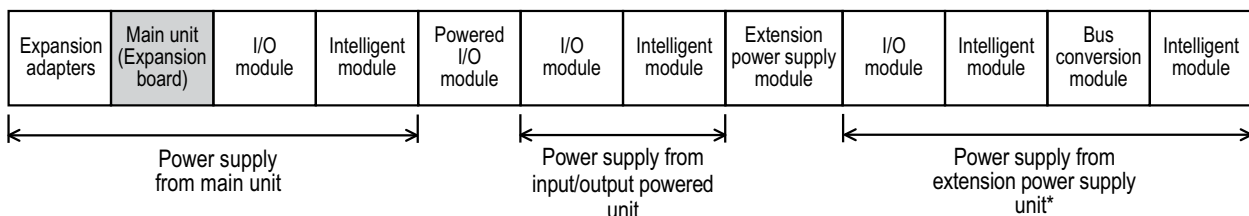
FX5UC



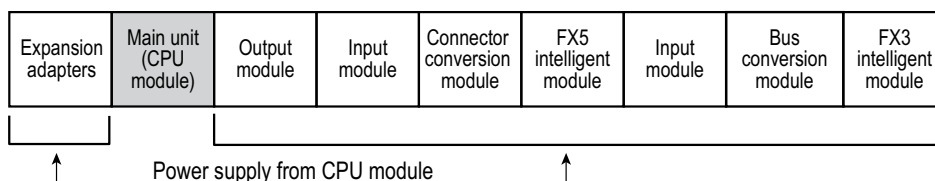
3. Calculation of current consumption:

The power is supplied to each connected device from the built-in power supply of the CPU module, powered input/output modules, or extension power supply modules. The power consumed varies depending on the type of product added.

FX5U



FX5UC



How to Specify

4. Limitations when using FX3 Series extension devices

- Use a bus conversion module to connect FX3 Series extension modules to a FX5 system. The FX3 Series extension modules can only be connected to the right side of the bus conversion module. Please review the manuals for limitations regarding the number of connectible modules.
- Some FX3 intelligent function modules have limitations on the number of connectible modules and the order in which they are connected.

Environmental Specifications

Model Number	FX5U / FX5UC				
Operating Ambient Temperature	-20 to 55°C (-4 to 131°F), non-freezing (*1)				
Storage Ambient Temperature	-25 to 75°C (-13 to 167°F)				
Ambient Humidity	5 to 95%RH, non-condensation				
Ambient Relative Humidity	5 to 95% RH (non-condensing)				
Vibration Resistance	—	Frequency	Acceleration	Half amplitude	10 times each in X, Y, Z direction (80 min in each direction)
	Installed on DIN rail	5 to 8.4 Hz	-	1.75 mm	
		8.4 to 150 Hz	4.9 m/s ²	-	
	Direct installing	5 to 8.4 Hz	-	3.5 mm	
		8.4 to 150 Hz	9.8 m/s ²	-	
Shock Resistance	147 m/s ² , Action time: 11 ms, 3 times by half-sine pulse in each direction X, Y, and Z				
Noise Durability	By noise simulator at noise voltage of 1000 Vp-p, noise width of 1 μs and period of 30 to 100 Hz				
Grounding	Class D grounding (grounding resistance: 100 Ω or less) Common grounding with a heavy electrical system is not allowed.				
Working Atmosphere	Free from corrosive or flammable gas and excessive conductive dust				
Operating Altitude	0 to 2000 m				
Installation Location	Inside a control panel				
Overvoltage Category	II or less				
Pollution Degree	2 or less				
Equipment Class	Class 2				

Note: The operating ambient temperature is 0 to 55°C (32 to 131°F) for products manufactured before June 2016. Please check manual for precautions when ambient operating temperature is lower than 0°C.

AC Power Supply Specifications

Model Number	FX5U-32M	FX5U-64M	FX5U-80M	FX5UC-32MT	FX5UC-64MT	FX5UC-96MT
Rated Voltage	100 to 240 VAC			24 VDC		
Allowable Supply Voltage Range	85 to 264 VAC			20.4 to 28.8 VDC		
Frequency Rating	50/60 Hz			-		
Allowable Instantaneous Power Failure Time	Operation can be continued upon occurrence of instantaneous power failure for 10 ms or less			Operation can be continued upon occurrence of instantaneous power failure for 5 ms or less		
Power Fuse	250 V, 3.15 A Time-lag fuse	250 V, 5 A Time-lag fuse		125 V, 3.15 A Time-lag fuse		
Rush Current	25 A max. 5 ms or less/100 VAC; 50 A max. 5 ms or less/200 VAC	30 A max. 5 ms or less/100 VAC 60 A max. 5 ms or less/200 VAC		30 A max. 0.5 ms or less/24 VDC	40 A max. 0.5 ms or less/24 V DC	
Power Consumption (*1)	30 W	40 W	45 W	8 W	8 W/24 VDC [33 W/24 VDC +20%, -15%]	11 W/24 VDC [36 W/24 VDC +20%, -15%]
5 VDC Power Supply Capacity	900 mA	1100 mA	1100 mA	720 mA		
24 VDC Service Power Supply Capacity (*2)	When Service Power Supply is Used for Input Circuits	400 mA	600 mA	600 mA	500 mA	
	When External Power Supply is Used for Input Circuits	480 mA	740 mA	770 mA		

Notes:

1. This value is for when all 24 VDC service power supplies are used in the maximum configuration in which they can be connected to the CPU module. The input current is included.
2. When I/O modules are connected, they consume current from the 24 VDC service power.

DC Power Supply Specifications

Item	FX5U-32M	FX5U-64M	FX5U-80M
Rated Voltage	24 VDC		
Allowable Supply Voltage Range	16.8 to 28.8 VDC		
Allowable Instantaneous Power Failure Time	Operation can be continued upon occurrence of instantaneous power failure for 5 ms or less.		
Power Fuse	250V, 3.15 A Time-lag fuse	250V, 5A Time-lag fuse	
Rush Current	50A max. 0.5 ms or less / 24 VDC	65A max. 2.0 ms or less/24 VDC	
Power Consumption (*1)	30W	40W	45W
24 VDC Built-in Power Supply Capacity	480 mA (360 mA) (*2)	740 mA (530 mA) (*2)	770 mA (560 mA) (*2)
5 VDC Built-in Power Supply Capacity	900 mA (775 mA) (*2)	1100 mA (975 mA) (*2)	

Notes:

1. Maximum consumption value when using the maximum configuration connectable to the CPU module.
2. The value in () is capacity of power supply when the supply voltage is 16.8 to 19.2 VDC.

CPU Modules

FX5U Main Units with 32 I/O

Model Number	FX5U-32MR/ES	FX5U-32MT/ES	FX5U-32MT/ESS	FX5U-32MR/DS	FX5U-32MT/DS	FX5U-32MT/DSS
Stocked Item	S	S	S	S	S	S
Certification	UL • cUL • CE					
Power Supply	100 to 240VAC			24 VDC		
Built-In Digital Inputs/Output Points	32	32	32	32	32	32
Built-In Digital Input Points	16	16	16	16	16	16
Built-In Digital Output Points	16	16	16	16	16	16
Digital Input Type	24 VDC (Sink/Source)	24 VDC (Sink/Source)	24 VDC (Sink/Source)	24 VDC (Sink/Source)	24 VDC (Sink/Source)	24 VDC (Sink/Source)
Digital Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Built-In Analog Inputs	2					
Built-In Analog Outputs	1					
Analog Input Type	0 to 10 VDC (input resistance 115.7 kΩ)					
Analog Output Type	0 to 10 VDC (external resistance 2kΩ to 1MΩ)					
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex					
Connection Type	Terminal block					
5 VDC Power Supply	900 mA (775 mA)	900 mA (775 mA)	900 mA (775 mA)	900 mA (775 mA)	900 mA (775 mA)	900 mA (775 mA)
24 VDC Power Supply (*1)	400 mA (480 mA)	400 mA (480 mA)	400 mA (480 mA)	480 mA; (360 mA)	480 mA; (360 mA)	480 mA; (360 mA)
Weight (kg)	0.65	0.65	0.65	0.65	0.65	0.65
Dimensions (W x H x D) mm	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83

Note 1: Power supply capacity when the power supply voltage is 16.8 to 19.2 VDC.

FX5U Main Units with 64 I/O

Model Number	FX5U-64MR/ES	FX5U-64MT/ES	FX5U-64MT/ESS	FX5U-64MR/DS	FX5U-64MT/DS	FX5U-64MT/DSS
Stocked Item	S	S	S	S	S	S
Certification	UL • cUL • C					
Built-In Digital Inputs/Outputs	64	64	64	64	64	64
Built-In Digital Inputs	32	32	32	32	32	32
Built-In Digital Outputs	32	32	32	32	32	32
Digital Input Type	24 VDC (Sink/Source)					
Digital Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Built-In Analog Inputs	2					
Built-In Analog Outputs	1					
Analog Input Type	0 to 10 VDC (input resistance 115.7 kΩ)					
Analog Output Type	0 to 10 VDC (external resistance 2kΩ to 1MΩ)					
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex					
Connection Type	Terminal block			Removable terminal block (M3 screws)		
5 VDC Power Supply	1100 mA			1100 mA (975 mA) (*2)		
24 VDC Service Power Supply	600 mA; (740 mA) (*1)			740 mA (530 mA) (*2)		
Weight (kg)	1.0					
Dimensions (W x H x D) mm	220 x 90 x 83	220 x 90 x 83	220 x 90 x 83	220 x 90 x 83	220 x 90 x 83	220 x 90 x 83

Notes:

1. Power supply capacity when external power supply is used for input circuit
2. The value in () is capacity of power supply when the supply voltage is 16.8 to 19.2 VDC.

FX5U Main Units with 80 I/O

Model Number	FX5U-80MR/ES	FX5U-80MT/ES	FX5U-80MT/ESS	FX5U-80MR/DS	FX5U-80MT/DS	FX5U-80MT/DSS
Stocked Item	S	S	S	S	-	S
Certification	UL • cUL • CE					
Built-In Digital Inputs/Outputs	80	80	80	80	80	80
Built-In Digital Inputs	40	40	40	40	40	40
Built-In Digital Outputs	40	40	40	40	40	40
Digital Input Type	24VDC (Sink/Source)					
Digital Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Built-In Analog Inputs	2					
Built-In Analog Outputs	1					
Analog Input Type	0 to 10 VDC (input resistance 115.7 kΩ)					
Analog Output Type	0 to 10 VDC (external resistance 2kΩ to 1MΩ)					
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex					
Connection Type	Terminal block			Removable terminal block (M3 screws)		
5 VDC Power Supply	1100 mA			1100 mA (975 mA) (*2)		
24 VDC Service Power Supply	600 mA; (770 mA) (*1)			770 mA (560 mA) (*2)		
Weight (kg)	1.2	1.2	1.2	1.2	1.2	1.2
Dimensions (W x H x D) mm	285 x 90 x 83	285 x 90 x 83	285 x 90 x 83	285 x 90 x 83	285 x 90 x 83	285 x 90 x 83

Notes:

1. Power supply capacity when external power supply is used for input circuit
2. The value in () is capacity of power supply when the supply voltage is 16.8 to 19.2 VDC.

How to Specify

FX5UC Main Units with 32 I/O

Model Number	FX5UC-32MT/D	FX5UC-32MT/DSS
Stocked Item	S	S
Certification	UL • cUL • CE	
Built-In Digital Inputs/Outputs	32	32
Built-In Digital Inputs	16	16
Built-In Digital Outputs	16	16
Digital Input Type	24 VDC (Sink)	24 VDC (Sink/Source)
Digital Output Type	Transistor (Sink)	Transistor (Source)
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex	
Connection Type	Connector	
5 VDC Power Supply	720 mA	720 mA
24 VDC Service Power Supply	500 mA	500 mA
Weight (kg)	0.2	0.2
Dimensions (W x H x D) mm	42.1 x 90 x 89.1	42.1 x 90 x 89.1

FX5UC Main Units with 64 I/O

Model Number	FX5UC-64MT/D	FX5UC-64MT/DSS
Stocked Item	S	S
Certification	UL • cUL • CE	
Built-In Digital Inputs/Outputs	64	64
Built-In Digital Inputs	32	32
Built-In Digital Outputs	32	32
Digital Input Type	24 VDC (Sink)	24 VDC (Sink/Source)
Digital Output Type	Transistor (Sink)	Transistor (Source)
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex	
Connection Type	Connector	
5 VDC Power Supply	720 mA	720 mA
24 VDC Service Power Supply	500 mA	500 mA
Weight (kg)	0.3	0.3
Dimensions (W x H x D) mm	62.2 x 90 x 89.1	62.2 x 90 x 89.1

FX5UC Main Units with 96 I/O

Model Number	FX5UC-96MT/D	FX5UC-96MT/DSS
Stocked Item	S	S
Certification	UL • cUL • CE	
Built-In Digital Inputs/Outputs	96	96
Built-In Digital Inputs	48	48
Built-In Digital Outputs	48	48
Digital Input Type	24 VDC (Sink)	24 VDC (Sink/Source)
Digital Output Type	Transistor (Sink)	Transistor (Source)
Built-In Communication	RS-485/RS-422 & Ethernet (100/10 Mbps) Full/Half Duplex	
Connection Type	Connector	
5 VDC Power Supply	720 mA	720 mA
24 VDC Service Power Supply	500 mA	500 mA
Weight (kg)	0.35	0.35
Dimensions (W x H x D) mm	82.3 x 90 x 89.1	82.3 x 90 x 89.1

I/O Modules

Unpowered I/O Modules

Model Number	FX5-8EX/ES	FX5-8EYT/ESS	FX5-8EYR/ES	FX5-8EYT/ES	FX5-16ER/ES	FX5-16ET/ES	FX5-16ET/ESS
Stocked Item	S	S	S	S	S	S	S
Certification	UL • cUL • CE						
Applicable PLCs	FX5U/FX5UC					FX5U	
Total No. of Points	8	8	8	8	16	16	16
No. of Input Points	8	-	-	-	8	8	8
No. of Output Points	-	8	8	8	8	8	8
Input Type	24 VDC (Sink/Source)	-	-	-	24V DC (sink/source)		
Output Type	-	Transistor (Source)	Relay	Transistor (Sink)	Relay	Transistor (sink)	Transistor (source)
Connection Type	Terminal block						
5 VDC Power Supply	75 mA	75 mA	75 mA	75 mA	100mA		
24 VDC Power Supply	50 mA	75 mA	75 mA	75 mA	125 mA	125 mA	125 mA
Weight (kg)	0.2	0.2	0.2	0.2	0.25	0.25	0.25
Dimensions (W x H x D) mm	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83

How to Specify

Model Number	FX5-16EX/ES	FX5-16EYR/ES	FX5-16EYT/ES	FX5-16EYT/ESS
Stocked Item	S	S	S	S
Certification	UL • cUL • CE			
Applicable PLCs	FX5U/FX5UC			
Total No. of Points	16	16	16	16
No. of Input Points	16	-	-	-
No. of Output Points	-	16	16	16
Input Type	24 VDC (Sink/Source)	-	-	-
Output Type	-	Relay	Transistor (Sink)	Transistor (Source)
Connection Type	Terminal block			
5 VDC Power Supply	100 mA	100 mA	100 mA	100 mA
24 VDC Power Supply	85 mA	125 mA	125 mA	125 mA
Weight (kg)	0.25	0.25	0.25	0.25
Dimensions (W x H x D) mm	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83	40 x 90 x 83

Model Number	FX5-C16EX/D	FX5-C16EX/DS	FX5-C16EYT/D	FX5-C16EYT/DSS
Stocked Item	S	S	S	S
Certification	UL • cUL • CE			
Applicable PLCs	FX5UC			
Integrated Inputs/Outputs	16	16	16	16
Integrated Inputs	16	16	-	-
Integrated Outputs	-	-	16	16
Input Type	24 VDC (Sink)	24 VDC (Sink/Source)	-	-
Output Type	-	-	Transistor (Sink)	Transistor (Source)
Connection Type	Connector			
5 VDC Power Supply	100 mA	100mA	100mA	100 mA
24 VDC Service Power Supply	-	-	100 mA	100 mA
External 24 VDC Power Supply (For Input Circuits)	65 mA	65 mA	-	-
Weight (kg)	0.1	0.1	0.1	0.1
Dimensions (W x H x D) mm	14.6 x 90 x 87	14.6 x 90 x 87	14.6 x 90 x 87	14.6 x 90 x 87

Model Number	FX5-C32EX/D	FX5-C32EX/DS	FX5-C32EYT/D	FX5-C32EYT/DSS	FX5-C32ET/D	FX5-C32ET/DSS
Stocked Item	S	S	S	S	S	S
Certification	UL • cUL • CE					
Applicable PLCs	FX5UC					
Integrated Inputs/Outputs	32	32	32	32	32	32
Integrated Inputs	32	32	-	-	16	16
Integrated Outputs	-	-	32	32	16	16
Input Type	24 VDC (Sink)	24 VDC (Sink/Source)	-	-	24 VDC (Sink)	24 VDC (Sink/Source)
Output Type	-	-	Transistor (Sink)	Transistor (Source)	Transistor (Sink)	Transistor (Source)
Connection Type	Connector					
5 VDC Power Supply	120 mA	120 mA	120 mA	120 mA	120 mA	120 mA
24 VDC Service Power Supply	-	-	200 mA	200 mA	100 mA	100 mA
External 24 VDC Power Supply (For Input Circuits)	130 mA	130 mA	-	-	65 mA	65 mA
Weight (kg)	0.15	0.15	0.15	0.15	0.15	0.15
Dimensions (W x H x D) mm	20.1 x 90 x 87	20.1 x 90 x 87	20.1 x 90 x 87	20.1 x 90 x 87	20.1 x 90 x 87	20.1 x 90 x 87

Powered I/O Modules

Model Number	FX5-32ER/ES	FX5-32ET/ES	FX5-32ET/ESS	FX5-32ER/DS	FX5-32ET/DS	FX5-32ET/DSS
Stocked Item	S	S	S	S	S	S
Certification	UL • cUL • CE					
Power Supply	100 to 240VAC			24VDC		
Applicable PLCs	FX5U					
Total No. of Points	32	32	32	32	32	32
No. of Input Points	16	16	16	16	16	16
No. of Output Points	16	16	16	16	16	16
Input Type	24 VDC (Sink/Source)					
Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Connection Type	Terminal block					
5 VDC Power Supply	965 mA	965 mA	965 mA	965 mA	965 mA	965 mA
24 VDC Power Supply	250 mA (310 mA) (*1)	250 mA (310 mA) (*1)	250 mA (310 mA) (*1)	310 mA	310 mA	310 mA
Weight (kg)	0.65	0.65	0.65	0.65	0.65	0.65
Dimensions (W x H x D) mm	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83	150 x 90 x 83

Note 1: Power supply capacity when external power supply is used for input circuit.

How to Specify

High-Speed Pulse Input/Output

High-Speed Pulse Input/Output modules connect to the FX5 CPU module and include high-speed counter, pulse width measurement, input interrupt and PWM output functions. They can be used as general input/output.

Model Number	FX5-16ET/ES-H	FX5-16ET/ESS-H
Stock	S	S
Certification	UL • cUL • CE	
Applicable CPU	FX5U/FX5UC (FX5-CNV-IFC or FX5-C1PS-5V is needed when using FX5UC)	
Rated Voltage	5 VDC (internal power), 24 VDC (service power supply or external power supply)	
Current Consumption	100 mA/5 VDC, 125 mA/24 VDC (current of the input circuit is included)	
Number of Input Points	8 points (sink/source)	
Input Signal Voltage	24 VDC +20%, -15%	
Input Signal Current	5.3 mA/24 VDC	
Input Impedance	4.3 kΩ	
Input Response Time	None, 10 μs, 50 μs, 0.1 ms, 0.2 ms, 0.4 ms, 0.6 ms, 1 ms, 5 ms, 10 ms (initial values), 20 ms, 70 ms	
Number of Output Points	8 points	
Output Type	Sink	Source
External Power Supply	5 to 30 V DC	
Maximum Load	1.6A/8 points common	
Open Circuit Leakage Current	0.1 mA or less/30 V DC	
Connection Type	Terminal Block (M3 Screw)	
Weight (kg)	0.25	
Dimension (W x H x D) mm	40 x 90 x 83	40 x 90 x 83

Analog Input Module

Model Number	FX5-4AD-ADP		
Stocked Item	S		
Certification	UL • cUL • CE (EMC)		
Applicable PLCs	FX5U/FX5UC		
Number of Analog Input Points	4 points (4 channels)		
Analog Input Voltage	-10 to +10 VDC (input resistance 1 MΩ)		
Analog Input Current	-20 to +20 mA DC (input resistance 250Ω)		
Digital Output Value	14-bit binary value		
Input Characteristics, Resolution (*1)	Analog Input Range		Digital Output Value
	Voltage	0 to 10 V	0 to 16000
		0 to 5 V	0 to 16000
		1 to 5 V	0 to 12800
	Current	-10 to +10V	-8000 to +8000
		0 to 20 mA	0 to 16000
		4 to 20 mA	0 to 12800
		-20 to +20 mA	-8000 to +8000
Accuracy (Accuracy for the Full Scale Digital Output Value)	Ambient temperature 25 ±5°C: within ±0.1 % (±16 digit); Ambient temperature 0 to 55°C: within ±0.2 % (±32 digit)		
Conversion Speed	Maximum 450 μs (The data will be updated at every scan time of the PLC.)		
Absolute Maximum Input	Voltage: ±15 V, Current: ±30 mA		
Isolation Method	Between input terminal and PLC: Photocoupler Between input channels: Non-isolation		
Number of Occupied I/O Points	0 point (This number is not related to the maximum number of I/O points of the PLC)		
Weight (kg)	0.1		
Dimensions (W x H x D) mm	17.6 x 106 x 89.1		

Note: For the input conversion characteristic refer to User's Manual.

Analog Output Module

Model Number	FX5-4DA-ADP			
Stocked Item	-			
Certification	CE (EMC)			
Applicable PLCs	FX5U/FX5UC			
Number of Analog Output Points	4 points (4 channels)			
Digital Input	14-bit binary value			
Analog Output Voltage	-10 to +10 VDC (external load resistance value 1k to 1 MΩ)			
Analog Output Current	0 to 20 mA DC (external load resistance value 0 to 500 Ω)			
Output Characteristics, Resolution (*1)	Analog Output Range		Digital Value	Resolution
	Voltage	0 to 10 V	0 to 16000	625 μV
		0 to 5 V	0 to 16000	312.5 μV
		1 to 5 V	0 to 16000	250 μV
		-10 to +10V	-8000 to +8000	1250 μV
	Current	0 to 20 mA	0 to 16000	1.25 μA
		4 to 20 mA	0 to 16000	1 μA
Accuracy (Accuracy for the Full Scale Analog Output Value)	Ambient temperature 25±5°C: ±0.1 % (Voltage ±20 mV, Current ±20 μA) Ambient temperature 0 to 55°C: ±0.2 % (Voltage ±40 mV, Current ±40 μA)			
Conversion Speed	Maximum 950 μs (The data will be updated at every scan time of the PLC.)			
Isolation Method	Between output terminal and PLC: Photocoupler; Between output channels: Non-isolation			
Number of Occupied I/O Points	0 point (This number is not related to the maximum number of I/O points of the PLC)			
Weight (kg)	0.1			
Dimensions (W x H x D) mm	17.6 x 106 x 89.1			

Note 1: For the output conversion characteristic refer to User's Manual.

How to Specify

Temperature Input Modules

Model Number		FX5-4AD-PT-ADP	FX5-4AD-TC-ADP
Stocked Item		S	S
Certification		UL • cUL • CE	
Analog Input Points		4 points	
Resistance Temperature Detector/Thermocouples		Pt100 /Ni100	K, J, T, B, R, S
Temperature Measuring Range		Pt100: -200 to +850°C Ni100: -60 to +250°C	K: -200 to +1200°C J: -40 to +750°C T: -200 to +350°C B: 600 to 1700°C R: 0 to 1600°C S: 0 to 1600°C
Digital Output		Pt100: -2000 to +8500°C Ni100: -600 to +2500°C	K: -2000 to +12000 J: -400 to +7500 T: -2000 to +3500 B: 6000 to 17000 R: 0 to 16000 S: 0 to 16000
Accuracy	25±5°C	Pt100: ±0.8°C Ni100: ±0.4°C	Varies according to thermocouple used. Please refer to the manual
	-20 to 55°C	Pt100: ±2.4°C Ni100: ±1.2°C	
Resolution		0.1°C(0.2°F)	K/J/T: 0.1°C B/R/S: 0.3°C
Conversion Speed		85 ms/channel	
Isolation Method		Between input terminal and CPU module: Photocoupler Between input channels: Non-isolation	
Number of Occupied I/O Points		0	
Dimension (H x W x D)		106 x 17.6 x 89.1	
Weight (kg)		0.1	

Intelligent Function Modules

Simple Motion Modules

Please refer to the Motion Controller section in this guide.

Communications and Networking Expansion

Serial Communication Expansion Boards

These communication expansion boards mount on the front of the CPU modules and allow communication with external devices and other CPU modules over serial networks.

Model Number	FX5-232-BD	FX5-485-BD	FX5-422-BD-GOT
Stocked Item	S	S	S
Certification	CE		
Applicable PLCs	FX5U		
Rated Voltage	5 VDC	5 VDC	5 VDC
Current Consumption	20 mA	20 mA	20 mA/5 VDC
Transmission Standard	RS-232C	RS-485/RS-422	RS-422
Max Distance	15 m (49' 2")	50 m (164' 0")	According to the specification of the GOT
Connection Method	9-pin D-sub, male	European terminal block	8-pin MINI-DIN, female
Terminal Resistor	-	Built-in (OPEN / 110Ω / 330Ω)	-
Insulation	Not insulated		
Communication Method	Half-duplex/Full-duplex		Half-duplex
Baud Rate	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)		9600/19200/38400/57600/115200 (bps)
Weight (kg)	0.02	0.02	0.02
Dimensions (W x H x D) mm	38 x 51.4 x 18.2	38 x 51.4 x 30.5	38 x 51.4 x 15.4

CC-Link IE Field

Model Number		FX5-CCLIEF
Stocked Item		S
Certification		UL • cUL • CE
Applicable CPU		FX5U/FX5UC
Station Type		Intelligent Device Station (Slave)
Power Supply		5VDC/10mA (internal), 24VDC/230mA (external)
Communication Speed		1Gbps
Max Station-to-Station Distance		100m
Network Topology		Line, star, ring
I/O Points		8
Max Number of Link Points	RX	384 points, 48 bytes
	RY	384 points, 48 bytes
	Rwr	1024 points, 2048 bytes (*1)
	RWw	1024 points, 2048 bytes (*1)
Weight (kg)		0.3
Dimension (W x H x D) mm		50 x 90 x 83

Note 1: 256 points (512 bytes) if master is set to high-speed mode.

Modbus and Serial Communication Expansion Adapters

These expansion adapters mount to the left side of the FX5 CPU modules and provide a wide range of serial communication standards including Modbus.

Model Number		FX5-232ADP	FX5-485ADP
Stocked Item		S	S
Certification		UL • cUL • CE	
Applicable PLCs		FX5U/FX5UC	
Rated Voltage		5 VDC; 24 VDC	
Current Consumption		30 mA / 5 VDC 30 mA / 24 VDC	20 mA / 5 V DC30 mA / 24 VDC
Transmission Standard		RS-232C	RS-485/RS-422
Max Distance		15 m (49' 2")	1200 m (3937' 0")
Connection Method		9-pin D-sub, male	European terminal block
Terminal Resistor		-	Built-in (OPEN/110Ω / 330Ω)
Insulation		Photocoupler isolation	Photocoupler isolation
Communication Method		Half-duplex/Full-duplex	Half-duplex/Full-duplex
Baud Rate		300/600/1200/2400/4800/9600/19200/38400 57600/115200 (bps)	300/600/1200/2400/4800/9600/19200/38400/57600/115200 (bps)
Weight (kg)		0.08	0.08
Dimensions (W x H x D) mm		17.6 x 106 x 82.8	17.6 x 106 x 89.1

Extension Power Supply

The IQ-F Series power supply unit is used to add power onto the expansion buses when the built-in service power supplies are not sufficient.

Model Number		FX5-1PSU-5V	FX5-C1PS-5V
Stocked Item		S	S
Certification		UL • cUL • CE	UL • cUL • CE
Applicable PLCs		FX5U	FX5UC
Rated Voltage		100 to 240 VAC	24 VDC
Rated Frequency		50/60Hz	-
Allowable Instantaneous Power Failure Time		10 ms or less	Operation can be continued upon occurrence of instantaneous power failure for 5 ms or less
Power Fuse		250 V 3.15 A time-lag fuse	125 V, 3.15 A Time-lag fuse
In-Rush Current		25 A Max. 5 ms or less/ 100 VAC 50 A Max. 5 ms or less/ 200 VAC	35A max 0.5 ms or less/24 VDC
Power Consumption		20 W Max.	30W
Output Current	24 VDC	0.3A	1200 mA
	5 VDC	1.2A	625 mA
Weight (kg)		0.3	0.1
Dimensions (W x H x D) mm		50 x 90 x 83	20.1 x 90x 74

How to Specify

Bus Conversion Module

The iQ-F bus conversion module enables the connection of FX3U Intelligent function modules to the FX5U control system. The FX3U intelligent function modules must be set up through the PLC program as parameter setup is not available in GX Works3.

Model Number	FX5-CNV-BUS	FX5-CNV-BUSC	FX5-CNV-IFC	FX5-CNV-BC	FX5-CNV-IF
Stocked Item	S	S	S	S	S
Certification	UL • cUL • CE				
Applicable PLCs	FX5U/FX5UC	FX5UC	FX5UC	FX5U/FX5UC	FX5U
Function	Bus conversion from CPU module or extension modules (extension cable type) or FX5 intelligent function modules	Bus conversion from CPU module or extension modules (extension connector type)	Connector conversion from CPU module or extension modules (extension connector type)	Connects extended extension cable to FX5 I/O, High speed pulse I/O, and intelligent function modules	Connects FX5 I/O modules (extension connector type) with FX5U CPU module systems.
No. of Occupied Input/Output Points	8	8	-	-	-
5 VDC Power Supply	150 mA	150 mA	-	-	-
Weight (kg)	0.1	0.1	0.06	0.04	0.06
Dimensions (W x H x D) mm	16 x 90 x 83	14.6 x 90 x 74	14.6 x 90 x 74	60.5 x 40 x 16.4	14.6 x 90 x 74

Extended Extension Cables

Model Number	FX5-30EC	FX5-65EC
Stocked Item	S	S
Applicable PLCs	FX5U/FX5UC	
Application	Used to install FX5 extension modules (extension cable type) at a remote location	
Length (m)	0.3	0.65

Accessories

SD Memory Card

Model Number	NZ1MEM-2GBSD	NZ1MEM-4GBSD
Stocked Item	S	S
Applicable PLCs	FX5U/FX5UC	
Memory Card Size	2GB	4GB

Battery

Model Number	FX3U-32BL
Stocked Item	S
Applicable PLCs	FX5U/FX5UC

Communication Cable

Model Number	FX-232CAB-1
Stocked Item	S
Applicable PLCs	FX5U/FX5UC
Application	PC to FX5-232ADP; PC to FX5-232-BD

Human Machine Interfaces

Bimba partners with Mitsubishi® Electric to provide a family of operator interface products and software needed to create, configure, and modify screens. This communication interface used with PLC systems ensures high capacity data processing for smooth screen operations when multiple tasks are running.



Contents

97	GT27 Series
	97 – Overview
	98 – Base Units
	98 – GOT + CC-Link IE Field Network Communication Unit Sets
	98 – Power Supply Specifications
	99 – Performance Specifications

100	GOT2000 Communication Interfaces
	101 – Option Units
	101 – Options and Accessories

102	GOT2000 Series Cable
	102 – Cables
	106 – Bus Connection Cables
	107 – Communication Units

109	Screen Configuration Software and GOT Licenses
	109 – Screen Design Software
	109 – Remote Access Licenses and Software

GT27 Series Overview

Model	Display	Resolution	Backlight	User Memory	Standard Interface	Extension Interface
GT27 Series	5.7", 8.4", 10.4", 12.1" and 15" size, 65536 colors TFT LCD display"	SVGA, VGA	White LED	Memory for storage (ROM): 57MB (GT2705 has 32MB) Memory for operation (RAM): 128MB (GT2705 has 80MB)	Ethernet, RS-232, RS-422/485 USB host (USB-A) 2ch* (High-Speed 480Mbps) USB device (USB Mini-B) 1ch (High-Speed 480Mbps) *White model has 1ch	CC-Link IE Controller, CC-Link IE Field, CC-Link, bus, MELSECNET/H

GT2715-S T B A GF

Code	Screen Size	Code	Resolution	Code	Display Type	Code	Frame Color	Code	Power Supply	Code	Communication Interface
15	15"	S	SVGA	T	TFT Color	B	Black	A	100-240VAC	None (*1)	Ethernet, RS-422/485, or RS-232, depending on model
12	12.1"	V	VGA			W	White	D	24VDC	-GF (*1)	CC-Link IE Field Network communication unit set
10	10.4"										
08	8.4"										
05	5.7"										

*1: For GT27

GT27	Advanced model with multi-touch gesture functions
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GOT2000 Series General Specifications

Model Number	GT27					
Operating Ambient Temp. (*1)	0 to 55°C (*2)					
Storage Ambient Temperature	-20°C to 60°C					
Operating Ambient Humidity	10 to 90%RH, no condensation					
Storage Ambient Humidity	10 to 90%RH, no condensation					
Vibration Resistance	Conforming to JIS B 3502 and IEC 61131-2	Under intermittent vibration	Frequency	Acceleration	Half Amplitude	Sweep Count
			5 to 8.4Hz	-	3.5mm	10 times each in X, Y and Z directions
		Under continuous vibration	8.4 to 150Hz	9.8m/s²	-	
			5 to 8.4Hz	-	1.75mm	
			8.4 to 150Hz	4.9m/s²	-	-
Impact Resistance	Compliant with JIS B 3502, IEC 61131-2 (147 m/s² (15G), 3 times each in X, Y and Z directions)					
Operating Atmosphere (*6)	No greasy fumes, corrosive gas, flammable gas, excessive conductive dust, and direct sunlight (as well as at storage)					
Operating Altitude (*3)	2000m (6562 ft) or less					
Installation Location	Inside control panel					
Overvoltage Category (*4)	II or less					
Pollution Degree (*5)	2 or less					
Cooling Method	Self-cooling					
Grounding	Grounding with a ground resistance of 100Ω or less. If impossible, connect the ground cable to the control panel.					

Notes:

- The operating ambient temperature includes the temperature inside the enclosure of the control panel to which the GOT is installed.
- (GT27) When any of the following units is mounted, the maximum operating ambient temperature must be 5 °C lower than the one described in the general specifications: multimedia unit (GT27-MMR-Z), MELSECNET/H communication unit (GT15-J71LP23-25, GT15-J71BR13), CC-Link communication unit (GT15-J61BT13)
 - If the ambient temperature exceeds 40°C, the absolute humidity must not exceed 90% RH at 40 °C.
- Do not use or store the GOT under a pressure higher than the atmospheric pressure at altitude 0 m. Doing so may cause a malfunction. Air purging by applying pressure to the control panel may create clearance between the surface sheet and the touch panel. This may cause the touch panel to be not sensitive enough or the sheet to come off.
- This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within the premises. Category II applies to equipment that is supplied with power from fixed facilities. The withstand surge voltage for the equipment with the rated voltage up to 300 V is 2500 V.
- This indicates the occurrence rate of conductive material in an environment where a device is used. Pollution degree 2 indicates an environment where only non-conductive pollution occurs normally and a temporary conductivity caused by condensation shall be expected depending on the conditions.
- (GT27 only) Some models have ANSI/ISA 12.12.01 approval for use in Class I, Division 2 (ANSI/ISA 12.12.01, C22.2 No.213-M1987) hazardous locations. For the details, please contact your local sales office.

How to Specify

GT27 Series

GT27 Base Units

Category	Model Number	Screen Size	Resolution	Display Type	Frame Color	Power Supply	Stocked Item
GT2715	GT2715-XTBA	15"	XGA (1024 x 768)	TFT Color	Black	100-240VAC	S
	GT2715-XTBD					24VDC	S
GT2712	GT2712-STBA	12.1"	SVGA (800 x 600)		Black	100-240VAC	S
	GT2712-STBD					24VDC	S
	GT2712-STWA				White	100-240VAC	S
	GT2712-STWD					24VDC	S
GT2710	GT2710-STBA	10.4"	SVGA (800 x 600)		Black	100-240VAC	S
	GT2710-STBD					24VDC	S
	GT2710-VTBA		VGA (640 x 480)			100-240VAC	S
	GT2710-VTBD					24VDC	S
	GT2710-VTWA				White	100-240VAC	S
	GT2710-VTWD					24VDC	S
GT2708	GT2708-STBA	8.4"	SVGA (800 x 600)	Black	100-240VAC	S	
	GT2708-STBD				24VDC	S	
	GT2708-VTBA		VGA (640 x 480)		100-240VAC	S	
	GT2708-VTBD				24VDC	S	
GT2705	GT2705-VTBD	5.7"	VGA (640 x 480)		24VDC	S	

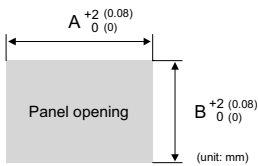
GT27 GOT + CC-Link IE Field Network Communication Unit Sets

Category	Model Number	Screen Size	Resolution	Display Type	Frame Color	Power Supply	Stocked Item
GT2715	GT2715-XTBA-GF	15"	XGA (1024 x 768)	TFT Color 65536 colors	Black	100-240VAC	S
	GT2715-XTBD-GF					24VDC	S
GT2712	GT2712-STBA-GF	12.1"	SVGA (800 x 600)		Black	100-240VAC	S
	GT2712-STBD-GF					24VDC	S
	GT2712-STWA-GF				White	100-240VAC	S
	GT2712-STWD-GF					24VDC	S
GT2710	GT2710-STBA-GF	10.4"	SVGA (800 x 600)		Black	100-240VAC	S
	GT2710-STBD-GF		24VDC			S	
	GT2710-VTBA-GF		VGA (640 x 480)		100-240VAC	S	
	GT2710-VTBD-GF					24VDC	S
	GT2710-VTWA-GF			White	100-240VAC	S	
	GT2710-VTWD-GF				24VDC	S	
GT2708	GT2708-STBA-GF	8.4"	SVGA (800 x 600)	Black	100-240VAC	S	
	GT2708-STBD-GF		24VDC		S		
	GT2708-VTBA-GF		VGA (640 x 480)		100-240VAC	S	
	GT2708-VTBD-GF				24VDC	S	
GT2705	GT2705-VTBD-GF	5.7"	VGA (640 x 480)		24VDC	S	

GT27 Power Supply Specifications

Model Number	GT2715-XTBA	GT2712-STBA GT2712-STWA	GT2710-STBA GT2710-VTBA GT2710-VTWA	GT2708-STBA GT2708-VTBA	GT2715-XTBD	GT2712-STBD GT2712-STWD	GT2710-STBD GT2710-VTBD GT2710-VTWD	GT2708-STBD GT2708-VTBD	GT2705-VTBD	
Input Power Supply Voltage	100 to 240VAC (+10%, -15%)				24VDC (+25%, -20%)					
Input Power Supply Frequency	50/60Hz ±5%				-					
Power Consumption	Maximum Load	51W or less	44W or less	41W or less	41W or less	48W or less	45W or less	42W or less	39W or less	30W or less
	Stand Alone	25W	19W	17W	15W	23W	15W	15W	13W	7W
	Stand Alone w/ Backlight Off	10W	10W	10W	10W	8W	8W	8W	8W	5W
Inrush Current	40A or less (3ms, ambient temperature 25°C, maximum load)	60A or less (2ms, ambient temperature 25°C, maximum load)				5A or less (20ms, ambient temperature 25°C, maximum load)				69A or less (1 ms, ambient temperature: 25°C, under the maximum load)
Permissible Instantaneous Failure Time	Within 20ms (100VAC or more)				Within 10ms					
Noise Resistance	Noise voltage 1500Vp-p, noise width 1μs by noise simulator with noise frequency 25 to 60Hz				Noise voltage 500Vp-p, noise width 1μs by noise simulator with noise frequency 25 to 60Hz					
Withstand Voltage	1500VAC for 1 minute between power supply terminal and ground				350VAC for 1 minute between power supply terminal and ground					
Insulation Resistance	10MΩ or higher with an insulation resistance tester (500VDC between power supply terminal and ground)									
Applicable Wire Size	0.75 to 2 [mm²]									
Clamp Terminal	Clamp terminals for M3 screw RAV1.25-3, V2-S3.3, V2-N3A, FV2-N3A									
Tightening Torque (Terminal Block's Terminal Screws)	0.5 to 0.8 [N·m]									

How to Specify



Screen Size	Model	A	B	Remarks
15"	GT2715	383.5 (15.10)	282.5 (11.12)	Same dimensions as GT1695, GT1595
12.1"	GT2712	302 (11.89)	228 (8.98)	Same dimensions as GT1685, GT1585, A985GOT
10.4"	GT2710	289 (11.38)	200 (7.87)	Same dimensions as GT167_M, GT157_M, A97_MGOT
8.4"	GT2708	227 (8.94)	176 (6.93)	Same dimensions as GT1665, GT1565
5.7"	GT2705	153 (6.02)	121 (4.76)	Same dimensions as GT1655, GT155_, GT145_, GT115_, GT105_, F940GOT

GT27 Performance Specifications

Model Number		GT2715-XBTA GT2715-XTBD	GT2712-STBA GT2712-STBD	GT2712-STWA GT2712-STWD	GT2710-STBA GT2710-STBD	GT2710-VTBA GT2710-VTBD	GT2710-VTWA GT2710-VTWD	GT2708-STBA GT2708-STBD	GT2708-VTBA GT2708-VTBD	GT2705-VTBD
Display Section (*1, *2)	Type	TFT color LCD								
	Screen Size	15"	12.1"		10.4"			8.4"		5.7"
	Resolution (Dots)	1024 x 768 XGA	800 x 600 SVGA			640 x 480 VGA			800 x 600 SVGA	640 x 480 VGA
	Display Size (W x H) mm	304.1 x 228.1	246.0 x 184.5			211.2 x 158.4			170.9 x 128.2	115.2 x 86.4
	Number of Characters	16-dot standard font: 64 chars. x 48 lines (2-byte) 12-dot standard font: 85 chars. x 64 lines (2-byte)	16-dot standard font: 50 chars. x 37 lines (2-byte) 12-dot standard font: 66 chars. x 50 lines (2-byte)			16-dot standard font: 40 chars. x 30 lines (2-byte) 12-dot standard font: 53 chars. x 40 lines (2-byte)			16-dot standard font: 50 chars. x 37 lines (2-byte) 12-dot standard font: 66 chars. x 50 lines (2-byte)	16-dot standard font: 40 chars. x 30 lines (2-byte) 12-dot standard font: 53 chars. x 40 lines (2-byte)
	Display Colors	65536 colors								
	Intensity Adjustment	32-level adjustment								
	Backlight	Type	LED (not replaceable)							
Life		Approx. 60000 hours or more (Time for display intensity reaches 50% at ambient temperature of 25°C) (*4)								
Touch Panel (*3)	Type	Analog resistive film								
	Key Size (Dots)	Minimum 2 x 2 dots (per key) (*7)								
	Simultaneous Press	Maximum 2 points								
	Life	1 million times or more (operating force 0.98N or less)								
Panel Color		Black	White		Black	White		Black		
Human Sensor	Detection Distance (m)	1m							-	
	Detection Temperature	Temperature difference between human body and ambient air: 4°C or higher							-	
Memory	User Memory Capacity	Memory for storage (ROM): 57MB, Memory for operation (RAM): 128MB								Memory for storage (ROM): 32MB, Memory for operation (RAM): 80MB
	Life (No. of Writings)	100000 times								
Internal Clock Accuracy		±90 sec/month (ambient temperature 25°C)								
Battery	Type	GT11-50BAT lithium battery								
	Life	Approx. 5 years (ambient temperature 25°C)								
Built-in Interface	RS-232	1ch Transmission speed: 115200/57600/38400/19200/9600/4800bps Connector shape: D-sub 9-pin (male)								
	RS-422/485	1ch Transmission speed: 115200/57600/38400/19200/9600/4800bps Connector shape: D-sub 9-pin (female)								
	Ethernet	1ch Data transfer method: 10BASE-T/100BASE-TX Connector shape: RJ-45 (modular jack)								
	USB (Host)	2ch (front face/rear face)	1ch (rear face)	2ch (front face/rear face)	1ch (rear face)	2ch (front face/rear face)				
		Maximum transfer speed: High-Speed 480Mbps Connector shape: USB-A								
	USB (Device)	1ch (front face)	1ch (rear face)	1ch (front face)	1ch (rear face)	1ch (front face)				
		Maximum transfer speed: High-Speed 480Mbps Connector shape: USB Mini-B								
	SD Card	1ch SDHC compliant (maximum 32GB)								
	Extension Interface (*6)	For communication unit/option unit mounting								
	Auxiliary Extension I/F	For option unit mounting								
	Side Interface	For communication unit mounting								
Buzzer Output		Single tone (tone, tone length adjustable)								
Power LED		Emission color: 2 colors (blue, orange)								
Protective Construction		Front: IP67F (*5,*8) In control panel: IP2X								
External Dimensions (W x H x D) mm		397 x 300 x 60	316 x 246 x 52		303 x 218 x 52			241 x 194 x 52		167 x 139 x 60

How to Specify

Panel Cutout (W x H) mm	383.5 x 282.5	302 x 228	289 x 200	227 x 176	153 x 121
Weight (kg)	4.5	2.4	2.1	1.5	1.0
Excludes Mounting Brackets					
Applicable Software Package	GT Works3 Version1.112S or later	GT Works3 Version1.100E or later			GT Works3 Version1.130L or later

Notes:

- As a characteristic of liquid crystal display panels, bright dots (always lit) and dark dots (never lit) may appear on the panel. Since liquid crystal display panels comprise a great number of display elements, the appearance of bright and dark dots cannot be reduced to zero. Individual differences in liquid crystal display panels may cause differences in color, uneven brightness and flickering. Note that these phenomena are characteristics of liquid crystal display panels and it does not mean the products are defective or damaged.
- Flickering may occur due to vibration, shock, or the display colors.
- When a stylus is used, the touch panel has a life of 100 thousand touches. The stylus must satisfy the following specifications: • Material: polyacetal resin • Tip radius: 0.8 mm or more
- To prevent the display section from burning in and lengthen the backlight life, enable the screen save function and turn off the backlight.
- To conform to IP67F, close the USB environmental protection cover by pushing the [PUSH] mark firmly. (To conform to IP2X, open the USB environmental protection cover.) Note that the structure does not guarantee protection in all users' environments. The GOT may not be used in certain environments where it is subjected to splashing oil or chemicals for a long period of time or soaked in oil mist.
- When using a GT2705 with multiple devices such as extension units, a barcode reader, and an RFID controller, the total amount of current must be within the maximum amount of current supplied by the GT2705. For the details, please refer to an appropriate GOT2000 Series manual.
- The minimum size of a key that can be arranged. To ensure safe use of the product, the following settings are recommended. • Key size: 16 x 16 dots or larger • Distance between keys: 16 dots or more
- The suffix "F" of IP67F is a symbol that indicates protection rate against oil. It is described in the Appendix of Japanese Industrial Standard JIS C 0920.

GOT2000 Communication Interfaces

Product Name	Model Number	Specifications	GT27	Stk Item
Serial Communication Unit	GT15-RS2-9P	RS-232 serial communication unit (D-sub 9-pin male)	X	S
	GT15-RS4-9S	RS-422/485 serial communication unit (D-sub 9-pin female) (*1)(*2)	X	S
	GT15-RS4-TE	"RS-422/485 serial communication unit (terminal block) (*1) Usable only when connecting to temperature controllers/indicating controllers via RS-485 or in GOT multi-drop connection	X	S
Q Bus Connection Unit	GT15-QBUS	Q bus connection (1ch) unit standard model	X	S
	GT15-QBUS2	Q bus connection (2ch) unit standard model	X	-
	GT15-75QBUSL	Q bus connection (1ch) unit slim model (*3)	X	S
	GT15-75QBUS2L	Q bus connection (2ch) unit slim model (*3)	X	-
MELSECNET/H Communication Unit	GT15-J71LP23-25	Normal station unit (optical loop)	X	-
	GT15-J71BR13	Normal station unit (coaxial bus)	X	-
CC-Link IE Controller Network Communication Unit	GT15-J71GP23-SX	Normal station unit (optical loop)	X	S
CC-Link IE Field Network Communication Unit	GT15-J71GF13-T2	CC-Link IE Field intelligent device station unit	X	S
CC-Link Communication Unit	GT15-J61BT13	CC-Link intelligent device station unit CC-LINK Ver. 2 compliant	X	S
Ethernet Communication Unit	GT25-J71E71-100	GOT 2000 series Ethernet interface unit	X	S
Field Network Adapter Unit	GT25-FNADP	Supported network: PROFIBUS DP, DeviceNet (*4)	X	S
Wireless LAN Communication Unit (*5)	GT25-WLAN	IEEE802.11b/g/n compliant, built-in antenna, wireless LAN access point (base station) (*6), station (client), connection to personal computer, tablet, smartphone. Compliance with: Japan Radio Law (*7), FCC (*8), R&TTE (*8), SRRC (*9), KC (*9)	X	S
Serial Multi-Drop Connection Unit	GT01-RS4-M	For GOT multi-drop connection	X	S

Notes:

- May not be able to be used depending on the connection target. For details, please refer to the GOT2000 Series Connection Manual.
- Cannot be used when connected with temperature controllers or indicating controllers by RS-485 (2-wire type) connection.
- Cannot be stacked with other units.
- The unit should be used with an Anybus® CompactCom M40 network communication module manufactured by HMS. Please purchase the module by specifying the article number.

Supported network	Communication module product name	Communication module article number
PROFIBUS DP	ABCC-M40-DPV1	AB6910-B, AB6910-C
DeviceNet	ABCC-M40-DEV	AB6909-B, AB6909-C

- Data transfer in wireless LAN communication may not be as stable as that in cable communication. A packet loss may occur depending on the surrounding environment and the installation location. Be sure to perform a confirmation of operation before using this product.
- When [Operation Mode] is set to [Access Point] in [Wireless LAN Setting] of GT Designer3, up to five stations are connectable.
- The product with hardware version A or later complies with the regulation. The product with hardware version A can be used only in Japan.
- The product with hardware version B or later complies with the regulation. The product with hardware version B or later can be used in Japan, the United States, the EU member states, Switzerland, Norway, Iceland, and Liechtenstein.
- The product with hardware version D or later complies with the regulation. The product with hardware version D or later can be used in Japan, the United States, the EU member states, Switzerland, Norway, Iceland, Liechtenstein, China (excluding Hong Kong, Macau, Taiwan), and Korea.

GOT2000 Option Units

Product Name	Model Number	Specifications	GT27	Stk Item
Printer Unit	GT15-PRN	USB slave (PictBridge) for printer connection, 1ch. Cable for printer connection (3m) included	X	S
Multimedia Unit	GT27-MMR-Z	For video input (NTSC/PAL) 1ch, Record video images/play video files	X (*1)	S
Video Input Unit	GT27-V4-Z	For video input (NTSC/PAL) 4ch	X (*1)	S
RGB Input Unit	GT27-R2	For analog RGB input 2ch (*2)	X (*1)	S
	GT27-R2-Z	For analog RGB input 2ch (*2)	X (*1)	S
Video/RGB Input Unit	GT27-V4R1-Z	For video input (NTSC/PAL) 4ch / analog RGB 1ch input	X (*1)	S
RGB Output Unit	GT27-ROUT	For analog RGB output 1ch	X (*1)	S
	GT27-ROUT-Z	For analog RGB output 1ch	X (*1)	-
Sound Output Unit	GT15-SOUT	For sound output	X	S
External Input/Output Unit	GT15-DIOR	For external input/output (Negative common input / source output)	X	S
	GT15-DIO	For external input/output (Positive common input / source output)	-	S

Notes:

1. This unit is not usable for the 5.7" model.
2. The settings for GT27-R2 and GT27-R2-Z differ in the screen design software.

GOT2000 Series Options and Accessories

Product Name	Model Number	Specifications	GT27	Stk Item
Protective Sheet (*1)	GT27-15PSGC	For 15" screens	X	S
	GT25-12PSGC	For 12.1" screens	X	S
	GT25-10PSGC	For 10.4" screens	X	S
	GT25-08PSGC	For 8.4" screens	X	S
	GT25-05PSGC	For 5.7" screens	X	S
	GT27-15PSCC	For 15" screens	X	S
	GT25-12PSCC	For 12.1" screens	X	S
	GT25-10PSCC	For 10.4" screens	X	S
	GT25-08PSCC	For 8.4" screens	X	S
	GT25-05PSCC	For 5.7" screens	X	S
USB Environmental Protection Cover	GT25-UCOV	For 15"/12.1"/10.4"/8.7" Protective cover for USB interface on GOT front panel (for replacement)	X	S
	GT25-05UCOV	For 5.7" Replacement USB Env. Cover GT2705 Series	X	S
Protective Cover for Oil (*3)	GT25-05PCO	For 5.7" screens	X	S
	GT20-15PCO	For 15" screens	X	S
	GT20-12PCO	For 12.1" screens	X	S
	GT20-10PCO	For 10.4" screens	X	S
	GT20-08PCO	For 8.4" screens	X	S
Stand	GT15-90STAND	For 15" screens	X	-
	GT15-80STAND	For 12.1" screens	X	-
	GT15-70STAND	For 10.4"/8.4" screens	X	-
	GT05-50STAND	For 5.7" screens	X	-
Memory Card	NZ1MEM-2GBSD	2GB SD memory card for GOT	X	S
	NZ1MEM-4GBSD	4GB SDHC memory card for GOT	X	S
	NZ1MEM-8GBSD	8GB SDHC memory card for GOT	X	S
	NZ1MEM-16GBSD	16GB SDHC memory card for GOT	X	-
	GT05-MEM-128MC	128MB CF card for GT27-MMR-Z	X	-
	GT05-MEM-256MC	256MB CF card for GT27-MMR-Z	X	-
	GT05-MEM-512MC	512MB CF card for GT27-MMR-Z	X	-
	GT05-MEM-1GC	1GB CF card for GT27-MMR-Z	X	-
	GT05-MEM-2GC	2GB CF card for GT27-MMR-Z	X	-
	GT05-MEM-4GC	4GB CF card for GT27-MMR-Z	X	-
Memory Card Adapter	GT05-MEM-8GC	8GB CF card for GT27-MMR-Z	X	-
	GT05-MEM-16GC	16GB CF card for GT27-MMR-Z	X	-
	GT05-MEM-ADPC	CF card memory card (TYPE II) conversion adapter for GT27-MMR-Z	X	-

Notes: See next page.

How to Accessorize

GOT2000 Series Options and Accessories continued

Attachment	GT15-70ATT-98	For 10.4"	For conversion from GT168_, GT158_, A985GOT (*4)	X	-
	GT15-70ATT-87		For conversion from A870GOT-SWS/TWS, A8GT-70GOT-TB/TW/SB/SW	X	S
	GT15-60ATT-97	For 8.4"	For conversion from GT167_, GT157_, A97MGOT	X	S
	GT15-60ATT-96		For conversion from A960GOT	X	S
	GT15-60ATT-87		For conversion from A870GOT-EWS, A8GT-70GOT-EB/EW, A77GOT-EL, A77GOT-EL-S5/S3	X	S
	GT15-50ATT-95W	For 5.7"	For replacing A956WGOT, F940WGOT	X	S
Battery	GT15-50ATT-85		For replacing A85_GOT	X	S
	GT11-50BAT	Battery for backup of SRAM data, clock data, and system status log data (included with GT27 and GT25)		X (for replacement)	S
Fittings	D808D197G53	GT27/25/23 Series Mounting Hardware (4 pieces)		X	S
	GT25-10FIT-EXS	GOT 2000 series fittings to be conformed with ATEX/KCs		X	S
	GT25-12FIT-EXS	GOT 2000 series fittings to be conformed with ATEX/KCs		X	S

Notes:

1. The white model does not have the front USB interface. It is recommended to use the products that the USB environmental protection cover area is closed.
2. When using the product with the USB environmental protection cover area closed, the front USB interface cannot be used.
3. Check if the protective cover for oil can be used in the actual environment before use. When using the cover, the front USB interface and human sensor cannot be used.
4. Including the GP250_ and GP260_ manufactured by Digital Electronics Corporation.
5. To conform to ATEX/KCs standard, use GOT model that conforms to the standard with an appropriate option. For the supported models, please contact your local sales office.

GOT2000 Series Cables

Product Name		Model Number	Cable Length	Application	Applicable Model GT27	Stock Item
Bus Connection Cable For QCPU (Q Mode)	QCPU Extension Cable GOT-to-GOT Connection Cable	GT15-QC06B	0.6m	For connection between QCPU and GOT For connection between GOT and GOT	X	-
		GT15-QC12B	1.2m			S
		GT15-QC30B	3m			S
		GT15-QC50B	5m			S
		GT15-QC100B	10m			S
	Long-Distance Connection Cable for QCPU GOT-to-GOT Long-Distance Connection Cable	GT15-QC150BS	15m	Between QCPU and GOT (for long-distance connection) A9GT-QCNB required Between GOT and GOT (for long-distance connection)	X	S
		GT15-QC200BS	20m			-
		GT15-QC250BS	25m			-
		GT15-QC300BS	30m			-
		GT15-QC350BS	35m			-
Bus Extension Connector Box		A9GT-QCNB	-	Attach to PLC main base when using QCPU and GOT long-distance connection	X	S
Ferrite Core Set for Q Bus Cable		GT15-QFC	-	Attach to GOT-A900 bus connection cable when replacing existing GOT-A900 with GOT2000 (two-pack)	X	S
RS-485 Terminal Block Conversion Unit		FA-LTBGTR4CBL05	0.5m	RS-485 terminal block conversion unit With cable for connection between RS-422/485 (connector) of GOT2000 and RS-485 terminal block conversion unit	X	-
		FA-LTBGTR4CBL10	1m			S
		FA-LTBGTR4CBL20	2m			-
RS-422 Conversion Cable		FA-CNV2402CBL	0.2m	Between QCPU/L02SCPU(-P) and RS-422 cable (GT01-CMR4-25P, GT10-CMR4-25P, GT21-CMR4-25P5); Between L6ADP-R2 and RS-422 cable (GT01-CMR4-25P, GT10-CMR4-25P, GT21-CMR4-25P5) [MINI-DIN6 pin and D-sub 25-pin]	X	-
		FA-CNV2405CBL	0.5m			-
RS-422 Cable	QnA/A/FXCPU Direct Connection Cable Computer Link Connection Cable	GT01-C30R4-25P	3m	Between QnA/ACPU/motion controller CPU (A Series)/FXCPU and GOT Between RS-422 conversion cable (FA-CNVMCBL) and GOT Between serial communication module and GOT Between peripheral connection module (AJ65BT-G4-S3) and GOT [Between D-sub 25-pin and D-sub 9-pin]	X	S
		GT01-C100R4-25P	10m			-
		GT01-C200R4-25P	20m			-
		GT01-C300R4-25P	30m			-
	Computer Link Connection Cable	GT09-C30R4-6C	3m	Between serial communication module and GOT Between computer link module and GOT [Between loose wire and D-sub 9-pin]	X	-
		GT09-C100R4-6C	10m			-
		GT09-C200R4-6C	20m			-
		GT09-C300R4-6C	30m			-
	FXCPU Direct Connection Cable FXCPU Communication Expansion Board Connection Cable	GT01-C10R4-8P	1m	Between FXCPU and GOT Between FXCPU communication expansion board and GOT [Between MINI-DIN 8-pin and D-sub 9-pin]	X	S
		GT01-C30R4-8P	3m			S
		GT01-C100R4-8P	10m			S
		GT01-C200R4-8P	20m			-
		GT01-C300R4-8P	30m			-

How to Accessorize

GOT2000 Series Cables (continued)

Product Name		Model Number	Cable Length	Application	Applicable Model GT27	Stock Item
RS-232 Cable	Q/LCPU Direct Connection Cable	GT01-C30R2-6P	3m	Between Q/LCPU and GOT Between L6ADP-R2 and GOT/personal computer (GT SoftGOT2000) [Between MINI-DIN 6-pin and D-sub 9-pin]	X	S
	FXCPU Communication Expansion Board Connection Cable FXCPU Communication Special Adapter Connection Cable	GT01-C30R2-9S	3m	Between FXCPU communication expansion board and GOT/personal computer (GT SoftGOT2000) Between FXCPU communication special adapter and GOT/personal computer (GT SoftGOT2000) [Between D-sub 9-pin and D-sub 9-pin]	X	S
	FXCPU Communication Special Adapter Connection cable	GT01-C30R2-25P	3m	Between FXCPU communication special adapter and GOT/personal computer (GT SoftGOT2000) [Between D-sub 25-pin connector and D-sub 9-pin]	X	-
	Computer Link Connection Cable CC-Link (G4) Connection Cable	GT09-C30R2-9P	3m	Between serial communication module and GOT Between computer link module and GOT Between peripheral connection module (AJ65BT-R2N) and GOT [Between D-sub 9-pin and D-sub 9-pin]	X	-
	Computer Link Connection Cable	GT09-C30R2-25P	3m	Between serial communication module and GOT Between computer link module and GOT [Between D-sub 25-pin and D-sub 9-pin]	X	-
External I/O Unit Connection Conversion Cable		GT15-C03HTB	0.3m	Between external I/O unit (GT15-DIO) and GOT-A900 external I/O interface unit connection cable (A8GT-C05TK, A8GT-C30TB, user-fabricated cable)	X	-
Analog RGB Cable		GT15-C50VG	5m	Between external monitor, personal computer and vision sensor and GOT	X	-
USB Cable	Data Transfer Cable Printer Connection Cable	GT09-C30USB-5P	3m	Between personal computer (screen design software) and GOT Between personal computer (GT SoftGOT2000) and QnUL/FXCPU Between PictBridge-compatible printer and printer unit (GT15-PRN) [Between USB-A and USB Mini-B]	X	S

Notes:

1. FA-LTBGT2R4CBL_, FA-CNV240_CBL are developed by Mitsubishi Electric Engineering Company Limited and sold through your local sales office. The other products listed are developed by Mitsubishi Electric Systems & Service Co., LTD. and sold through your local sales office.

How to Accessorize

GOT2000 Series Cables For Other Brand PLCs

Product Name	Model Number	Cable Length	Third Party Products	GOT Connection Destination	Applicable Model	Stock Item
					GT27	
RS-232 Cable	Cable For OMRON PLC	GT09-C30R20101-9P	X	PLC CPU: CQM1/CQM1H/CS1/CJ1/CV500/CV1000/CV2000/CVM1. Serial communication unit: CJ1W-SQU21(-V1)/CJ1W-SQU4(-V1) Communication board: C200HW-COM02/COM05/COM06 Serial communication board: CQM1-SCB41/CS1W-SCB41/CS1W-SCB21/ CP1W-CIF01 Connection Cable CPM2C-CN111		
		GT09-C30R20102-25S		Connection cable: CQM1-CIF01		
		GT09-C30R20103-25P		Base mount type host link unit: C500H-LK201-V1		
	Cable For KEYENCE PLC	GT09-C30R21101-6P		PLC CPU: KV-3000/KV-1000/KV-700		
		GT09-C30R21102-9S		Multi-communication unit: KV-L20/L20R/L20V port 1		
		GT09-C30R21103-3T		Multi-communication unit: KV-L20/L20R/L20V port 2		
	Cable For SHARP PLC	GT09-C30R20601-15P		PLC CPU: JW-22CU/70CUH/100CUH/100CU		
		GT09-C30R20602-15P		PLC CPU: JW-32CUH/33CUH/Z-512J		
	Cable For JTEKT (Former Toyota Machine Works) PLC	GT09-C30R21201-25P		RS-232/RS-422 converter: TXU-2051		
	Cable For Shinko Technos Digital Indicating Controller	GT09-C30R21401-4T		Digital indicating controller: FCR-100/FCD-100/FCR-23A/PC-900/FIR series		
		GT09-C30R20501-9P		PLC CPU: T2E		
	Cable For TOSHIBA PLC	GT09-C30R20502-15P		PLC CPU: T2N		
		GT09-C30R20401-15P		PLC CPU: H-4010/H-/H-300/H-700/H-1000/H-2000 Series, board type/EH-150 Series; Intelligent serial port module: COMM-H/COMM-2H		
	Cable For Hitachi Industrial Equipment Systems PLC	GT09-C30R20402-15P		PLC CPU: H-4010/EH-150 Series	X	-
		GT09-C30R21301-9S		Communication module: LQE560/LQE060/LQE160		
	Cable for Fuji Electric FA Components & Systems PLC	GT09-C30R21003-25P		RS-232C interface card: NV1L-RS2RS-232C/485 Interface capsule: FFK120A-C10 General interface module: NC1L-RS2/FFU120B		
		GT09-C30R20902-9P		PLC CPU: FP2/FP2SH/FP10(S)/FP10SH/FP-M Computer communication unit: AFP2462/AFP3462/AFP5462		
	Cable For Yaskawa Electric PLC	GT09-C30R20904-3C		PLC CPU: FP1-C16CT/C32CT		
		GT09-C30R20201-9P		PLC CPU: PROGIC-8/MP-920/MP-930		
		GT09-C30R20202-15P		PLC CPU: PROGIC-8		
		GT09-C30R20204-14P		PLC CPU: MP-940		
		GT09-C30R20205-25P		MEMOBUS module: CP-217IF (when connected to CN2) Yokogawa Electric personal computer module: LC01-0N/LC02-0N		
	Cable For Yokogawa Electric PLC	GT09-C30R20301-9P		CPU port/D-sub 9-pin conversion cable: KM10-0C		
		GT09-C30R20302-9P		Personal computer module: F3LC11-1N/ F3LC11-1F/F3LC12-1F/F3LC11-2N		
		GT09-C30R20304-9S		Converter: ML2-__		
	Cable For Allen-Bradley PLC	GT09-C30R20701-9S		PLC CPU: SLC500 Series Converter: 1761-NET-AIC		
	Cable For SIEMENS PLC	GT09-C30R20801-9S		HMI adapter: 6ES7 972-0CA11-0XA0; PLC CPU: S7-300/400		

How to Accessorize

Product Name	Model Number	Cable Length	Third Party Products	GOT Connection Destination	Models GT27	Stock Item
RS-422 Cable	Cable For OMRON PLC	GT09-C30R40101-9P	X	PLC CPU: CV500/CV1000/CV2000/CVM1 (-V1)/CJ1W-SCU41(-V1) Serial communication unit: CJ1W-SCU41 Serial communication board: CQM1-SCB41/CS1W-SCB41	X	-
		GT09-C100R40101-9P				
		GT09-C200R40101-9P				
		GT09-C300R40101-9P				
		GT09-C30R40102-9P				
		GT09-C100R40102-9P		Base mount type host link unit: C200H-LK202-V1/C500H-LK201-V1 Communication board: C200HW-COM03/COM06		
		GT09-C200R40102-9P				
		GT09-C300R40102-9P				
		GT09-C30R40103-5T		Communication board: CP1W-CIF11		
		GT09-C100R40103-5T				
	Cable For KEYENCE PLC	GT09-C200R40103-5T				
		GT09-C30R41101-5T		Multi-communication unit: KV-L20/L20R /L20V port 2		
		GT09-C100R41101-5T				
	Cable For SHARP PLC	GT09-C200R41101-5T				
		GT09-C30R40601-15P		PLC CPU: JW-22CU/70CUH/100CUH/100CU		
		GT09-C100R40601-15P				
		GT09-C200R40601-15P				
		GT09-C300R40601-15P				
		GT09-C30R40602-15P		PLC CPU: JW-32CUH/33CUH		
		GT09-C100R40602-15P				
		GT09-C200R40602-15P				
		GT09-C300R40602-15P				
		GT09-C30R40603-6T		Link unit: JW-21CM/10CM/ZW-10CM		
	Cable For JTEKT (Former Toyota Machine Works) PLC	GT09-C100R40603-6T				
		GT09-C200R40603-6T				
		GT09-C300R40603-6T				
		GT09-C30R41201-6C		PLC CPU: PC3J/PC3JL Communication module: PC/CMP2-LINK		
	Cable For TOSHIBA PLC	GT09-C100R41201-6C				
		GT09-C200R41201-6C				
		GT09-C300R41201-6C				
		GT09-C30R40501-15P		PLC CPU: T2/T3/T3H/ model 3000 (S3)		
		GT09-C100R40501-15P				
		GT09-C200R40501-15P				
		GT09-C300R40501-15P				
		GT09-C30R40502-6C		PLC CPU: T2E/model2000(S2)		
		GT09-C100R40502-6C				
		GT09-C200R40502-6C				
		GT09-C300R40502-6C				
		GT09-C30R40503-15P		PLC CPU: T2N		
		GT09-C100R40503-15P				
		GT09-C200R40503-15P				
		GT09-C300R40503-15P				

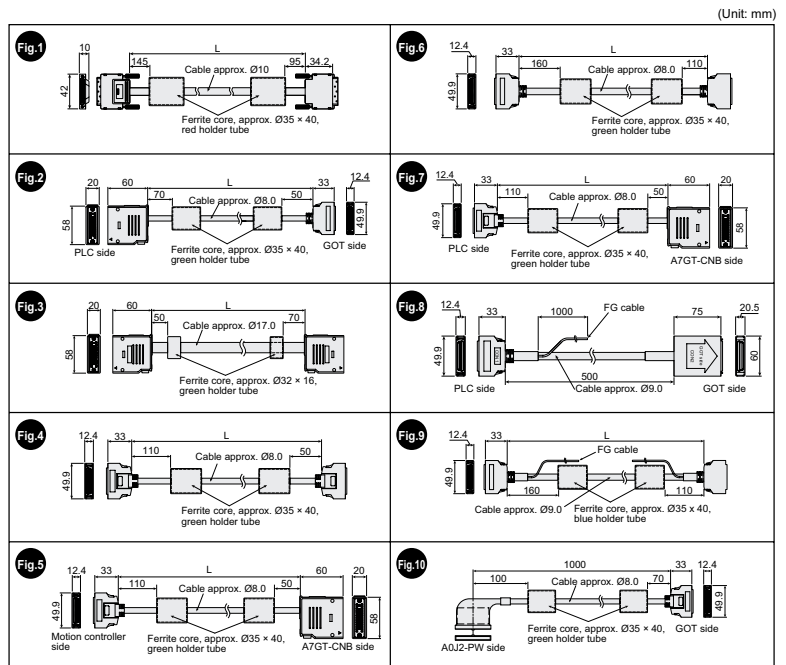
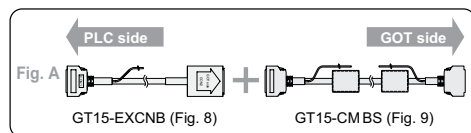
How to Accessorize

	Product Name	Model Number	Cable Length	Third Party Products	GOT Connection Destination	Models GT27	Stock Item
RS-422 Cable	Cable For Hitachi Industrial Equipment Systems PLC	GT09-C30R40401-7T	3m	X	Intelligent serial port module: COMM-H/COMM-2H		
		GT09-C100R40401-7T	10m				
		GT09-C200R40401-7T	20m				
		GT09-C300R40401-7T	30m				
	Cable For Hitachi PLC	GT09-C30R41301-9S	3m		PLC CPU: LQP510		
		GT09-C100R41301-9S	10m		Communication module: LQE565/LQE165		
		GT09-C200R41301-9S	20m				
		GT09-C300R41301-9S	30m				
	Cable For Fuji Electric FA Components & Systems PLC	GT09-C30R41001-6T	3m		RS-232C/485 interface capsule: FFK120A-C10		
		GT09-C100R41001-6T	10m		General interface module: NC1L-RS4/FFU120B		
		GT09-C200R41001-6T	20m				
		GT09-C300R41001-6T	30m				
	Cable For Yaskawa Electric PLC	GT09-C100R40201-9P	10m		MEMOBUS module: JAMSC-120NOM27100/JAMSC-IF612		
		GT09-C200R40201-9P	20m				
		GT09-C300R40201-9P	30m				
		GT09-C30R40202-14P	3m				
		GT09-C100R40202-14P	10m		PLC CPU: MP940	X	-
		GT09-C200R40202-14P	20m				
		GT09-C300R40202-14P	30m				
		GT09-C30R40301-6T	3m				
	Cable For Yokogawa Electric PLC	GT09-C100R40301-6T	10m		Personal computer link module: F3LC11-2N		
		GT09-C200R40301-6T	20m				
		GT09-C300R40301-6T	30m				
		GT09-C30R40302-6T	3m				
		GT09-C100R40302-6T	10m		Personal computer link module: LC02-0N		
		GT09-C200R40302-6T	20m				
		GT09-C300R40302-6T	30m				
		GT09-C30R40303-6T	3m				
	Cable For Yokogawa Electric Temperature Controller	GT09-C100R40303-6T	10m		Temperature controller: GREEN Series		
		GT09-C200R40303-6T	20m				
		GT09-C300R40303-6T	30m				
		GT09-C30R40304-6T	3m				
		GT09-C100R40304-6T	10m		Temperature controller: UT2000 Series		
		GT09-C200R40304-6T	20m				
		GT09-C300R40304-6T	30m				

Bus Connections Cables

Cable	Cable Length	External Dim.
GT15-QC_B	0.6, 1.2, 3, 5, 10m	Fig. 1
GT15-QC_BS	15, 20, 25, 30, 35m	Fig. 1
GT15-C_NB	1.2, 3, 5m	Fig. 2
GT15-AC_B	0.6, 1.2, 3, 5m	Fig. 3
GT15-A370C_B-S1	1.2, 2.5m	Fig. 4
GT15-A370C_B	1.2, 2.5m	Fig. 5
GT15-A1SC_B	0.7, 1.2, 3, 5m	Fig. 6
GT15-A1SC_NB	0.45, 0.7, 3, 5m	Fig. 7
GT15-C_EXSS-1 (*1)	10.6, 20.6, 30.6m	Fig. 8 & 9
GT15-EXCNB	0.5m	Fig. 8
GT15-C_BS	0.7, 1.2, 3, 5, 10, 20, 30m	Fig. 9
GT15-J2C10B	1m	Fig. 10

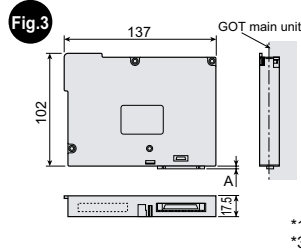
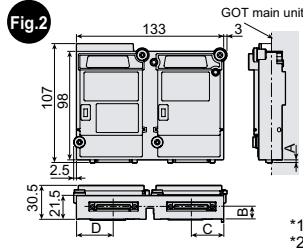
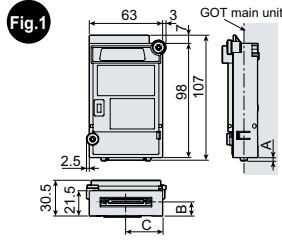
Note 1: GT15-C_EXSS-1 is a set consisting of GT15-EXCNB and GT15-CMBS. (See Fig. A.)



MITSUBISHI® – HUMAN-MACHINE INTERFACES

How to Accessorize

(Unit of measure: mm)



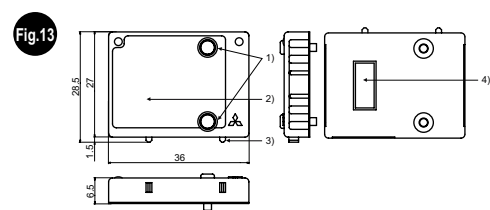
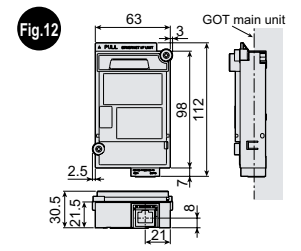
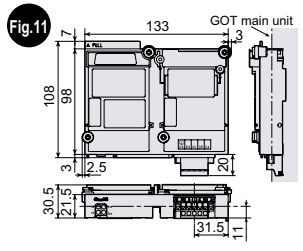
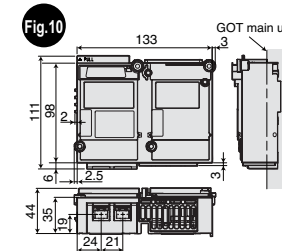
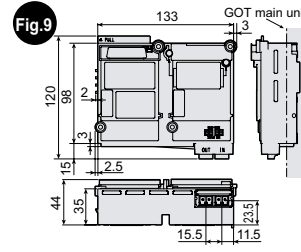
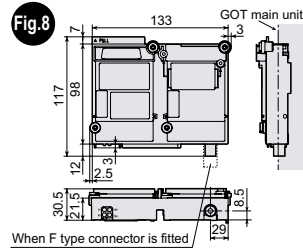
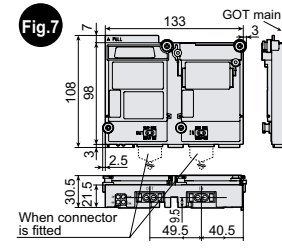
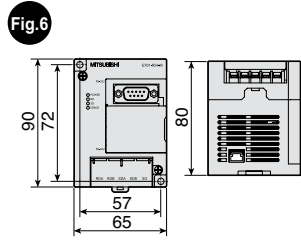
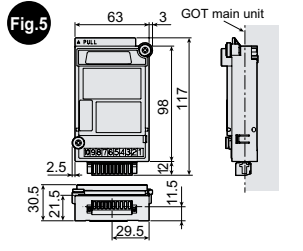
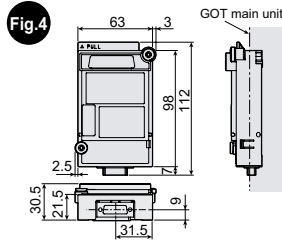
Notes:

*1 The connector shape varies depending on the model.

*2 Dimensions A-D for each communication unit.

*3 Dimension A for each communication unit.

Model Number	A	B	C	D
GT15-QBUS	2.5	12	31.5	-
GT15-QBUS2	2.5	11	29	33.5



Screen Configuration Software and GOT Licenses

GOT Screen Design Software

Screens for both GOT2000 and GOT1000 Series operator terminals are created using the GT Designer3, part of the GT Works3 suite of software products for GOTs. GT Designer3 provides an intuitive screen design environment that offers many features to make designing professional screens and projects for GOTs simple and efficient. The other titles included in GT Works3 provide additional resources to provide the ability to perform simulation, PC based operation, and convert projects created for legacy products and documents to be imported.

Product Name	Model Number	Description	Language	Included Software Titles	Stocked Item
GT Works3	GT-WORKS3-C1	GT Works3 1 User License Software Suite	English	GT Designer3 (GOT2000), GT Designer3 (GOT1000), GT Simulator3, GT Converter2, GT SoftGOT, Document Converter, GT SoftGOT2000/1000 (*1), GT SoftGOT2000/1000 Commander (*1), GT Designer2 Classic	S
	GT-WORKS3-C5	GT Works3 5 User License Software Suite			S
	GT-WORKS3-C10	GT Works3 10 User License Software Suite			-
	GT-WORKS3-UN	GT Works3 Unlimited User License Software Suite			-
	GT-WORKS3-OEM	GT Works3 OEM User License Software Suite			-

Note 1: To use GT SoftGOT2000 or GT SoftGOT1000, a license key is necessary for each personal computer.

GOT2000 Series Remote Access Licenses

Model Number	Description	Applicable Models	Stocked Item
		GT27	
GT25-PCRAKEY-1	GOT2000 PC Remote Operator License – 1 User	X	S
GT25-PCRAKEY-5	GOT2000 PC Remote Operator License – 5 Users	X	-
GT25-PCRAKEY-10	GOT2000 PC Remote Operator License – 10 Users	X	-
GT25-PCRAKEY-20	GOT2000 PC Remote Operator License – 20 Users	X	-
GT25-VNCSKEY-1	GOT2000 VNC Server License Key – 1 User	X	S
GT25-VNCSKEY-5	GOT2000 VNC Server License Key – 5 Users	X	S
GT25-VNCSKEY-10	GOT2000 VNC Server License Key – 10 Users	X	S
GT25-VNCSKEY-20	GOT2000 VNC Server License Key – 20 Users	X	S
GT25-WEBSKEY-1	GT25/27 GOT Mobile License Key – 1 License	X	S
GT25-WEBSKEY-5	GT25/27 GOT Mobile License Key – 5 Licenses	X	S
GT25-WEBSKEY-10	GT25/27 GOT Mobile License Key – 10 Licenses	X	S
GT25-WEBSKEY-20	GT25/27 GOT Mobile License Key – 20 Licenses	X	S

Note: A license is required for GOT2000 Series HMIs using the VNC (Virtual Network Computer) function for the purposes of remote access.

1. GT2107 wide models only

GT SoftGOT Remote Access Software

GT SoftGOT products enable remote access and operation of connected components with a personal computer acting as a operator interface. The software needed for SoftGOT access is included with GT Works3 and a USB license key is required for continuous operation on each PC.

GT SoftGOT

GT SoftGOT2000 for GOT2000 Series models enable an Ethernet connected PC to either share project data with a GOT and allow for remote monitoring and operation or connect directly to a PLC via Ethernet with no GOT hardware required.

GT SoftGOT Commander

GT SoftGOT2000 Commander for GOT2000 Series models enable multiple GT SoftGOT modules to be managed simultaneously, providing remote monitoring and operation functionality for larger systems.

Product Name	Model Number	Stock Status
USB License Key for SoftGOT	GT27-SGTKEY-U	S

GOT2000 MES Interface Access Licenses (GT25/GT27 Only)

Model Number	Description	Stocked Status
GT25-MESIFKEY-1	GOT2000 MES Interface License - 1 User	S
GT25-MESIFKEY-5	GOT2000 MES Interface License - 5 User	-
GT25-MESIFKEY-10	GOT2000 MES Interface License - 10 User	-
GT25-MESIFKEY-20	GOT2000 MES Interface License - 20 User	-

GOT1000 Remote Access License

Model Number	Description	Stocked Item
GT14-VNCSKEY-1	GT14 VNC Server License Key - 1 User	S
GT14-VNCSKEY-5	GT14 VNC Server License Key - 5 User	-
GT14-VNCSKEY-10	GT14 VNC Server License Key - 10 User	-
GT14-VNCSKEY-20	GT14 VNC Server License Key - 20 User	-

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